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ABSTRACT

The principal aim of Australia's Distance Learning for Inservice Teacher Education (DLITE) Project has been to develop a proposal and knowledge base for the development of a cooperative national policy for the application of distance learning to inservice teacher education in Australia. This report provides background information on the state of open access for teacher professional development and a proposed policy framework with a list of potential projects. "Open access" is the application of the whole range of delivery methods for education and training. It is achieved, ideally, through infrastructures that extend opportunities to educators and students to participate in all forms of teaching and learning from on-campus face-to-face through the use of advanced telecommunications and information technology formerly associated with distance education. Open access should be included in current national developments because it offers unique and beneficial solutions to several problems; its adoption is both timely and urgent. Clear criteria are required to evaluate the appropriateness of policy proposals for open access. Adoption of a cooperative national policy framework for open access for teachers' professional development will support the establishment of nationwide infrastructures to facilitate cooperation and consultation, resource sharing, and cost-effectiveness. Specific projects can be implemented in the short term to build on current open access initiatives. Eleven appendixes contain an outline of the project methodology, lists of contributors and other involved persons, a summary of teacher training principles and good practices, information on the existing infrastructure for open access, an explanation of management aspects of state and territory education systems, and other relevant materials. (Contains 94 references.) (SLD)

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OPEN ACCESS

FOR

TEACHERS' PROFESSIONAL

DEVELOPMENT

Towards a Cooperative National Policy Framework for the Application of Distance Learning to the Professional Development of Teachers

A Project of National Significance in Teacher Quality
Commissioned by
The Department of Employment, Education and Training

NOVEMBER 1991

Project Team:
Dr Roy Lundin, QUT (Project Officer)
Ms Helen Williams, QUT (Senior Research Officer)
Prof Leo Bartlett, UCQ
Assoc Prof Rod Gerber, QUT
Mr Bruce Scriven, QUT

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November1991

Minister for Employment, Education and Training
Parliament House
CANBERRA ACT 2600

Dear Mr Dawkins,

In August 1990, this Project Team was commissioned to develop proposals for a cooperative national policy for the application of distance learning to inservice teacher education (DLITE). We are pleased now to present our Report produced through an extensive mapping and consultative process. It contains:

- background information summarising the state of open access for teachers' professional development across Australia;
- a proposed policy framework with strategy ideas for implementation; and
- a list of projects which may be implemented in the short term.

After appropriate consideration, it would seem of value for you to table the Report at the next meeting of the AEC as a basis for endorsing a common, agreed approach and further action. The Report could then be referred to the AEC Working Party on a National Communications Framework for the Educational Delivery and the National Project on Teaching and Learning.

We also recommend its wide distribution as a basis for new initiatives.

Throughout the project we have received strong support and invaluable assistance from participants across all states, systems, sectors and community groups with an interest in education.

Thank you for the opportunity of contributing to the process of improving educational quality in Australia.

Yours sincerely,

Dr Roy Lundin, Project Officer
Ms Helen Williams, Senior Research Officer
Prof. Leo Bartlett
Assoc. Prof. Rod Gerber
Mr Bruce Scriven

Open Access for Teachers' Professional Development

CONTENTS

Letter of Transmittal i

Contents iii

Acknowledgements vii

List of Initialisms and Acronyms viii

Section 1 Open Access for Teachers' Professional Development 6
1.1 The DLITE Project 6
1.2 Terminology 7
1.3 Open Access and Communications Technology 8
1.4 The Ideal Scenario 12
1.5 Significant Features of the Ideal Scenario 13
1.6 Summary 14

Section 2 The Rationale for Adopting and Implementing an Open Access Approach to Teachers' Professional Development 15
2.1 Changes in Education 15
2.2 The Continuing Professional Development Response of Some Australian Professions and Industries 18
2.3 Implications for TPD 21
2.4 Summary 22

Section 3 Existing Foundations for an Open Access Approach 23
3.1 Policies for Teachers' Professional Development 23
3.2 The Management and Provision of Teachers' Professional Development 27
3.3 Communications Technology and Education 42
3.4 Summary 48

Section 4 Characteristics of a Responsive Policy for Open Access for TPD 50
4.1 Criteria Relevant to the Teaching Profession 50
4.2 Socio-political Criteria 53
identities and aspirations. 54
4.3 Feasibility Criterion 54
4.4 Summary 55

Section 5 Proposals for a Policy Framework 56
5.1 Program Design and Development Infrastructure 56
5.2 Communications Infrastructure 61
5.3 Management Infrastructure 64
and valued by all employers, including for promotional purposes. 70
5.4 Summary 72

Section 6 Realising the Scenario 73
6.1 A National Educational Network for Schools 73
6.3 Projects recommended to the AEC 76
6.4 Management Infrastructure Projects 76
6.5 A Final Word 76

References 77
Appendix A 83
Appendix B 85
Appendix C 86
Appendix D 87
Appendix E 88
Appendix F 94
Appendix G 95
Appendix H 99
Appendix I 103

Figure 1 Professional Development Strategies of the Australian Science Teachers' Association. 34
Figure 2 Foundations for improved valuation or recognition of teachers' professional development 41
Figure 3 Telecommunications Carriers and Their Services 44
Figure 4 Databases of relevance to TPD 68

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- The Department of Employment, Education and Training for the funding support and advice;
- State consultants to the Project;
- Individuals and organisations who offered their views and suggestions at interviews and/or through written submissions or directed the project towards appropriate sources of information;
- Forum participants, and
- The Teaching Quality Steering Committee, DEET.

List of Initialisms and Abbreviations

AARNET	Australian Academic and Research Network
ABC	Australian Broadcasting Commission
ACE	Australian College of Education
ACER	Australian Council for Educational Research
ACEUT	Australian Committee on Educational Use of Telecommunications
ACIN	Australian Curriculum Information Network
ACSSO	Australian Council of State School Organisations
ACT	Australian Capital Territory
ADEN	Australian Distance Education Network
AEC	Australian Education Council
AGPS	Australian Government Publishing Service
AISQ	Association of Independent Schools of Queensland
ASCIDEC	Australian Science Distance Education Consortium
ASCIS	Australian Schools Curriculum Information Service
ASPESA	Australian and South Pacific External Studies Association
AST	Advanced Skills Teacher
ASTA	Australian Science Teachers' Association
AT & T	American Telephone and Telegraph
ATF	Australian Teachers' Federation
ATU	Australian Teachers Union
AUSSAT	Australian Satellite
AUSTEL	Australian Telecommunication Authority
AVCC	Australian Vice-Chancellors Committee
BITNET	'Because it's time!' Network (Email in USA)
CAE	College of Advanced Education
CAP	Country Areas Program
CATS	Centre for Advanced Teaching Studies
CBAS	Computer Based Administration System
CBTS	Computer Based Training Systems
CCET	Centre for the Continuing Education of Teachers
CEC	Catholic Education Commission
CML	Computer Managed Learning
CONASTA	Conference of the Australian Science Teachers' Association
CRESAP	Educational Consultants
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DEC	Distance Education Centre
DEET	Department of Employment, Education and Training
DLITE	Distance Learning for Inservice Teacher Education
DOTAC	Department of Transport and Communications

EARN	European Academic Research Network (Email)
EDTV	Educational Television
ELIC	Early Literacy Inservice Course
EMC	Educational Media Centre
ESL	English as a Second Language
FLIP	Further Literacy Inservice Course
GRISTS	Gulf Remote and Isolated Teleconferencing Sched
GWN	Golden West Network
HECS	Higher Education Contribution Scheme
ISDN	Integrated Services Digital Network
HEI	Higher Education Institution
IEA	Institute of Engineers Australia
ISEN	Interactive Satellite Education Network
ITF	Independent Teachers Federation
JAC	Job and Course Explorer
LOTE	Languages Other Than English
MDS	Multiple Distribution System
MST	Master Skills Teacher
MU	Monash University
MUCG	Monash University College of Gippsland
NBEET	National Board of Employment, Education and Training
NCEC	National Catholic Education Commission
NCISA	National Council of Independent Schools of Australia
NDEC	National Distance Education Conference
NESB	Non English -Speaking Background
NEXUS	(South Australian Educational Email Network)
NSW	New South Wales
NT	Northern Territory
OTC	Overseas Telecommunications Commission
PACT	Professional and Continuing education for Teachers
PD	Professional Development
QERC	Quality of Education Review Committee
QLD	Queensland
QOLCN	Queensland Open Learning Centre Network
QSTV	Queensland Satellite Television
QUT	Queensland University of Technology
RATE	Remote Area Teacher Education (Northern Territory
RATEP	Remote Area Teacher Education Project (Queensland)
RCTS	Remote Commercial Television Service
RISTS	Remote and Isolated Schools Teleconferencing Sched
SA	South Australia

SACAE	South Australian College of Advanced Education
SBS	Special Broadcasting Service
SDA	Seventh Day Adventist
SLAQ	School Library Association of Queensland
SMEC	Science and Mathematics Education Centre
TAFE	Technical and Further Education
TAS	Tasmania
TASNET	Tasmanian Network (Email +)
TELESLAQ	Teleconference of the School Library Association of Queensland
TPD	Teachers' Professional Development
TSN II	The Satellite Network (Queensland)
UCCQ	University College of Central Queensland
UCSQ	University College of Southern Queensland
UNE	University of New England
UNELINK	University of New England Videoconferencing Network
UNINET	University Network (Sydney)
UTAS	University of Tasmania
VAX	Mainframe computer
VCE	Victorian Certificate of Education
VIC	Victoria
VISTEL	Victorian Telecommunications Network
VSAT	Very Small Aperture Terminal (Satellite dish)
VTOCN	Victorian Tafe Off-campus Network
WA	Western Australia
WADEC	Western Australian Distance Education Consortium
WCOTP	World Conference of Organisations of the Teaching Profession

OPEN ACCESS
FOR TEACHERS' PROFESSIONAL DEVELOPMENT

November 1991

EXECUTIVE SUMMARY

1. Open access for teachers' professional development is a potentially valuable tool for improving the quality of teaching and learning in all Australian schools.

'Open access' is the application of the whole range of delivery methods for education and training. This is achieved, ideally, through providing infrastructures which extend opportunities to participate in all forms of teaching and learning from on-campus, face-to-face, through to the use of advanced telecommunications and information technologies formerly associated with distance education.

Teachers' professional development (TPD) has been recognised as an important contributor to quality in schools at both state and national levels. It is this focus on teacher quality which prompted the commissioning of this Project of National Significance in August 1990 *to develop a cooperative national policy for the application of distance learning to inservice teacher education (DLITE)*. This Report, therefore, focuses mainly on the extension of TPD through distance learning and the use of communications technology.

The open access approach offers the potential for equity of access for all teachers, and aims to address the effects of professional isolation and educational disadvantage often experienced by teachers and their students in rural and isolated schools. Open access goes beyond traditional distance education, providing a range of options for all teachers regardless of location. As such it does not ignore or replace existing options, but rather extends these by building upon existing infrastructures and exploiting present major initiatives. These include the recommendations of the Finn Review, the work of the AEC Working Party on a National Communication Framework for Educational Delivery and the DEET project on a National Framework for Open Learning. TPD is one more area which can use the evolving national infrastructure.

The concept, however, is not limited to teachers. Inherent benefits pertain for all school personnel and community members involved in education and training, including other professional groups and other levels of education through the use of the same infrastructures in a coordinated manner.

2. Open Access for TPD should be included in current national developments in education and training to ensure an adequate response to a range of pressures and to achieve common national goals.

An open access policy for TPD should be adopted and implemented because it offers a unique and cost beneficial solution in response to a range of pressures, because it will coordinate current independent initiatives for TPD and because it can be implemented readily along with current major national developments in open access for education and training.

It is the conclusion of this Project that open access as defined above is the most effective approach for TPD to ensure an adequate response to pressures in many areas:

- **social justice**, including access for rural teachers and other teachers with special needs;
- **economics**, including increasing teachers' productivity, sharing expertise and resources, economies of scale and the inclusion of education in the process of micro-economic reform;
- **education**, including National Curriculum changes, articulation between high schools and TAFE and the current focus on teacher quality;

- **technology**, including evolving networks of communications and information technologies in all sectors of education and training and new technological options which are becoming affordable and which have the potential to extend effective participation in TPD to every part of Australia for the first time;

- **politics**, including recommendations in major reports (eg Finn Review), the award restructuring which includes a new emphasis on TPD, the establishment of state consortia for TPD and the national goals to extend education and training to country areas to develop human resources there.

Despite the absence of an overall national policy on either initial teacher education or the continuing professional development of teachers, adoption of a coordinated national open access approach to TPD provides the possibility of addressing urgent needs. This Report, therefore, has had to address TPD in the broader sense while trying to outline ways of extending opportunities through open access.

3. Recent policy changes and strategic actions involving all State and Territory education systems make the adoption of a cooperative national open access policy for TPD timely and urgent.

The current climate of cross-sectoral collaborative curriculum and infrastructure development in which systems with limited resources and scarce expertise attempt to respond to the changes of society through rationalisation and joint venturing makes it opportune for the implementation of a national policy framework for open access for TPD.

National and state initiatives in communications technologies and the development of open access infrastructures point to the need for cooperative national policies and strategies not only for cooperative curriculum development for schools, TAFE and higher education, but also for new approaches to teachers' professional development along lines similar to other professions.

Establishing linkages between these evolving state systems and coordination of future developments towards a national educational communications system are the tasks of the new AEC Working Party on National Communications which will also be developing a national open access curriculum framework.

The foundations for a cooperative open access approach for teachers' professional development have therefore already been laid. It will now be necessary to build upon these existing resources to achieve Australia-wide networks for education and training.

4. Clear criteria are required to evaluate the appropriateness of open access policy proposals and strategies for teachers' professional development in meeting national goals of quality teaching and learning.

These criteria should include the following elements:

An effective open access policy framework for the professional development of teachers will aim to strengthen Australian schools, and to contribute to improving school effectiveness and educational outcomes for students. It will also aim to encourage, enable and support teacher participation in professional development. It will support career planning for teachers and teacher professionalism.

The policy framework will also create the possibility of improving equity of access to professional development and reducing possible adverse professional effects of teaching in isolation, particularly but not only for those in rural areas. Issues of social justice for teachers and students currently experiencing disadvantage will also be addressed.

The policy framework will be democratic and will respect the integrity of established educational systems. The cultural and educational worth of local contexts will be valued. Existing procedures and resources will provide the basis for cooperation and development.

5. Adoption of a cooperative national policy framework for open access for teachers' professional development will support the establishment of nationwide infrastructures to facilitate cooperation and consultation, resource sharing and cost-effectiveness.

The adoption of a national policy framework for teachers' professional development through an open access approach offers the potential for collaborative action involving policy makers, administrators and practitioners.

The policy framework proposed in this Report addresses three areas essential for an effective and efficient national network:

- **a program design and development infrastructure** which deals with the development and provision of a range of comprehensive professional development activities accessed through a variety of methods or channels and which will be of value in a variety of settings meeting a range of purposes across the country;
- **a communications infrastructure** which will be established through a collaborative approach involving governments and systems to ensure that every school has a gateway to a range of communications channels, including broadcast and interactive networks;
- **a management infrastructure** which is based on a coordinated-decentralised network of local, regional, state and national representative bodies; includes an informational database of professional development activities; provides a credit-granting mechanism for professional development activities; includes technology training as an integral part of any professional development program; and supports research into all aspects of open access learning.

  The implementation of such policy can be on a gradual, staged basis according to priorities established and resources available.

6. Specific projects can be implemented in the short term on a staged basis to build upon current open access initiatives.

In order to address the issues previously mentioned and to weave emerging developments into a national cooperative system, some concrete short-term steps have been identified to realise the goals and benefits inherent in the proposed policy framework for TPD. These projects will enhance the development of a coherent, responsive, national open access network for all aspects of education and training.

General Project

Ultimately, every school requires an educational communications 'gateway', an **Open Access Classroom Studio (OACS),** to enable it to participate in the networking of schools for:

- sharing national curriculum components and expertise;
- coordinating efforts through administration and management meetings;
- sharing professional development and training for all teachers and other members of the school community; and
- accessing support services.

Equipment already available in schools and communities makes it possible for many schools **now** to access a range of existing communications networks. Extension of such facilities to all schools can be achieved at a relatively small financial cost. Rural schools should receive a high priority for early connection to the networks. Such a general project could be phased in over a period of time using a number of funding arrangements as described in Sections 5.2.2 and 6.1.

There may also be commercial opportunities for schools through community and industry use of these facilities.

Specific Projects

Access to electronic telecommunications infrastructures or networks will not be fruitful unless TPD (and other) activities are designed, produced and delivered via these systems.

Specific, short-term, multi-State TPD projects, aimed at present needs and priority areas already identified can be supported as 'trail blazing' projects. They should be collaborative between the Commonwealth and State Governments, and between providers and teachers to ensure that:

- the needs of all types of schools are attended to; and
- the mechanisms for collaboration are put in place and working .

These specific suggestions are grouped below according to the three policy areas. Again, these projects can be implemented over a period of time by various agencies already set up to fund such projects.

Program design and development projects:

(1) Assist existing non-award teachers' professional development projects to develop distance mode materials, e.g. for current projects developing course modules within the Teacher Quality area of the Projects of National Significance Program.

(2) Support a cooperative national non-award courseware development and delivery project. Possible topics allocated among interested states and territories should address current national curriculum priorities and other areas of national need where expertise is scarce:

- induction into rural and isolated schools;
- beginning teachers;
- principals' professional development in the context of isolated schools;
- principals in their first year of appointment;
- working with children with special needs, including Aboriginal children;
- secondary subject content areas of national significance such as LOTE, careers education, science, maths and technology education; and
- refresher courses.

Such activities should be encouraged to use communications technology such as satellite videoconferencing, audio teleconferencing and electronic mail.

(3) Encourage professional networking among teachers working at a distance, a task involving pilot projects in which teachers are assisted to use established student-based interactive communications technology for professional development and training purposes.

(4) Support conversion of a selection of existing, print-based, external, award courses (e.g. B.Ed. and Graduate Diploma units) to more interactive media, such as 'talk-back' satellite video (videoconferencing) and computer-based audiographics. Funding should focus on practical, action-oriented, skills-based units of study of immediate relevance as a first priority to facilitate acceptance. These subject units should also be converted into smaller modular formats to increase flexibility.

Communications technology projects:

(5) Refer issues relating to linking standards and communications networks to the AEC Working Party on a National Communications Framework for Educational Delivery.

(6) Map and critically analyse projects over the past five years which have used communications technology for education and training.

(7) Research effective educational uses of communication technologies, with particular reference to courseware design.

Management infrastructure projects:

(8) Fund a national meeting of existing state consortia for teachers' professional development and representatives from other state and territory systems for a national meeting to plan networking across systems for national coordination and sharing of initiatives.

(9) Map existing and evolving databases of award and non-award teachers' professional development activities available in distance education mode. This could be supplemented by a needs analysis of priority areas.

THE REPORT

OPEN ACCESS FOR TEACHERS' PROFESSIONAL DEVELOPMENT

Section 1 Open Access for Teachers' Professional Development

In August 1990, DEET commissioned the development of a proposal for a cooperative national policy for the application of distance learning to inservice teacher education. Even during the short life of the project a number of significant ongoing developments have broadened the scope and terminology of the Project, and confirmed the opinion that the time is now appropriate for the development of such a policy and its strategic implementation.

In many respects the substance of the proposals for a policy framework outlined in this Report already exists. The proposed policy framework presented here is a crystallisation of existing and emerging, yet perhaps 'ad hoc' policies across educational systems. It attempts to synthesise these evolving threads into a coherent, balanced statement for the development of a national policy for open access to teachers' professional development.

Initially, school teachers were the focus of the project, with acknowledged implications for educators in other fields. The establishment in April, 1991 of an AEC Working Party on the National Communications Framework for Educational Delivery (hereafter referred to as the AEC Working Party), which includes representation from the schools sector, TAFE, higher education and industry, now provides a mechanism for a broader view of the term 'teacher' than originally conceived and for cross-sectoral collaboration. This Report's proposals can therefore be extended to a range of professional educators, specialists, other educators and paraprofessionals working in education and training.

1.1 The DLITE Project

The Distance Learning for Inservice Teacher Education [DLITE] Project's principal aim has been to develop a proposal and knowledge base for the development of a cooperative national policy for open access by teachers to professional development activities. There are two main outcomes expected of this Project:

- a proposed policy framework; and
- suggested strategies for policy realisation.

A distinction is made, however, between these policy and strategy suggestions and the **actual policy and procedures** employed for their implementation, this being the responsibility of decision-makers.

In this document, the proposed policy directions for future developments have been designed:

- to acknowledge present restructuring of educational systems;
- to make optimum use of existing distance learning resources;
- to acknowledge past and present developments in the areas of telecommunications and emerging technologies; and
- to promote educationally effective and economically efficient provision of services to **all** teachers, particularly those in rural areas.

In developing this policy, a consultative process emphasising interaction among the various interest groups was used. This process is outlined in Appendix A.

1.2 Terminology

The terminology relating to teachers' professional development is by no means consistent across Australia, and the Project paid close attention to the ways in which various terms are being used, since strong feelings are attached to certain points of view. It is apparent that the history of some terminology has led people to associate certain policies and practices with particular language use. The Project Team has considered all points of view encountered and uses the following terminology in this Report:

1.2.1 Open access

Whereas the project was originally commissioned to consider applications of 'distance learning', the term 'open access' now appears more appropriate in the context of cross-sectoral cooperation, national collaborative curriculum development and emerging communications systems linking the educational community. The term implies equity of provision and access, and indicates the potential to overcome many of the current causes of exclusion and professional isolation. Rural isolation will remain a major focus but, in addition, open access options may reduce the professional isolation experienced by the sole subject specialist in a metropolitan school, or isolation due to exceptionality, language and cultural or personal barriers.

Through the use of communications technology it is now possible for a wide range of educational options and relationships to be explored whether people and institutions are in metropolitan or rural areas, and whether learners are studying within or external to their institutions.

1.2.2 Communications technology

Again, the Project Team has adopted a very broad interpretation of this phrase. It includes all forms of technology for the development and delivery of learning programs whether this be through the post, broadcast radio and television, interactive communications systems ('teleconferencing'), through the use of computers or various combinations of these. These options are developed further in Section 1.3 and examples of their use for teachers' professional development are given in Section 3.3.3 and Appendix H.

1.2.3 National

This term is used in a broad sense. It assumes that any cooperative policy is in some sense **derived** from a national perspective which has evolved from the multiple perspectives of participants in the Project. In another sense it reflects the characteristic of **application** of the derived policy to many contexts throughout the nation. It is distinct from 'federal' and 'Commonwealth' which pertain to government. The term 'national' in this Report, therefore implies agreement between all the various governmental and other agencies concerned with teacher education and schooling and is characterised by the three attributes of:

- negotiation and consensus among interest groups to arrive at a broad framework from among many diverse statements, values and beliefs;
- a search for the lowest common denominator, standard or level of operation, for example in the use of a specific technology; and
- a binding quality or legal entity that is not constitutional as reflected in the terms 'federal' or 'Commonwealth'.

1.2.4 Teacher

Although the brief for this Project referred specifically to 'inservice **teacher** education' there is no reason to believe or suggest that principals, other professional educators, other specialists and paraprofessional support staff in the school systems should be excluded. In addition, the proposed policy framework will have implications for educators in the TAFE, industry, continuing education and higher education sectors. A broad definition of 'teacher' as educator is adopted.

1.2.5 Teachers' Professional development

The dominant concept of 'inservice' education has changed dramatically over the past five years as education systems across the nation have appropriated the language (and equivalent practices) of corporate management. 'Professional development' is used in this Report as a broad umbrella term since distinctions between 'professional development' and 'training' or between 'human resource development' and 'continuing education' do not serve the proposed policy framework well. The term 'professional development' is applicable across various subcategories or nuances of the term reflecting purpose, timing, origin or content. It incorporates both 'employer provided' and 'teacher initiated' activities, and makes no delineation across the continuum of professional education between 'pre' and 'post' initial training. Nevertheless the prime focus of this Report is professional development subsequent to initial credentialling requirements.

It should be noted then, that **all forms** of 'inservice', 'continuing education', 'training' and 'professional development', whether formal or informal, whether teacher-initiated or system-initiated, and whether accredited or otherwise, are included in the term 'teachers' professional development' which is abbreviated to TPD.

1.2.6 Policy

'Policy' is described as 'guidelines for decision-making and action'. Policy reflects and legitimates values (Prunty, 1985), and is always guided by human ideological concerns. These values are often expressed as sets of principles or assumptions. This Project found that significant commonalities were apparent within several sets of principles concerning TPD. Rather than formulating another set of principles, the proposed policy framework begins with a description of an 'ideal scenario' which encapsulates the major principles of recent published policy documents, and reports on teacher education in a context of distance learning or open access. A set of criteria by which the proposals may be judged is also presented. These provide the goals, values and criteria for a policy framework.

A second feature of the Report is the presentation of **strategies** which suggest ways for developing and applying policies. These strategies transcend the conditions and needs of local and state contexts in which the proposed policy will be implemented. Strategies should be distinguished from the implementation process which will involve decision-making by persons in their various contexts of responsibility.

1.3 Open Access and Communications Technology

Because 'distance education', 'open access' and 'communications technology' are central to this Project, it is necessary to describe them in greater detail.

1.3.1 From external studies to open learning

Australia has had a long history of **external studies** at all levels of education from School of the Air to correspondence courses at TAFE and university levels. From this grew the notion of distance education which embraces a range of methods to overcome all forms of isolation, not merely geographical distance (Darnell and Higgins, 1983).

Open learning over-rides the dichotomy of external and internal studies. It is *a philosophy and system whereby all options for post-compulsory education are kept open* (**Queensland Access to Higher Education,** 1989, p.3) and is characterised by flexible arrangements negotiated by learners to meet their specific needs.

There is general acceptance across Australia, as well as overseas, that an open learning model should be adopted for all post-compulsory education. The Australian House of Representatives Standing Committee on Employment, Education and Training promoted open learning in its report on the enquiry into the potential of new technology, particularly satellite technology, to improve educational access and outcomes in Australia:

> *Open learning attempts to give the student as much choice as possible to determine what one would like to study; to determine how much one wants to study, considering one's own purposes in studying; to determine where and how one wants to study - on campus or at home, full-time or part-time, using various media, at one's own pace; to determine the level one wants to achieve and the ways in which and the times at which those assessments will be made.* (**An Apple for the Teacher?** 1989, p.7).

That Committee identified the following important elements of open learning:

- carefully developed materials;
- small modules of study;
- counselling services;
- choice from a number of institutions (implying credit transfer); and
- use of a variety of media and communications technology.

The **Open Learning** report (Johnson, 1990) commissioned by NBEET also provides a comprehensive rationale for the adoption of open learning as well as identifying a range of issues relating to its implementation.

'Open access', however, is a relatively recent phrase in the Australian context. It is used particularly with reference to school and TAFE outreach systems. The use seems to indicate greater emphasis on flexible ways of **accessing** learning programs rather than on the philosophy inherent in the term 'open learning' which assumes fewer prerequisites, more flexible learning options and greater learner control.

Open access promotes the notion that there should not be any distinction between the way in which 'external' and 'internal' students are treated. Indeed, recently the development of 'distance education' materials and support services has actually discriminated against internal students. It is now generally accepted that distance learning materials and services previously restricted to external student use should now be available to internal students, thus opening access for all students.

It is interesting to note a trend for students in urban areas, close to institutions, to choose the 'external' mode of study. For example, one-third of the 7000 external students of UCSQ, Toowoomba, live in the Brisbane area.

The use of methods normally associated with distance education and the use of communications technology are important aspects of creating learning opportunities to meet the needs of all learners, wherever they may be located. These methods and technologies can also lead to many new opportunities for sharing and exchanging, thus enriching learning programs across Australia as well as around the world.

1.3.2 Types of communications technology

In the recent past the use of communication technologies tended to be seen as a way of making up for what was missing in traditional external studies/correspondence education - a deficiency model of distance education. There is a realisation now that interactive electronic technologies in particular can contribute to the quality of education for both on-campus and off-campus students — a value-added model of education.

As such, this model can provide additional flexibility and extension of human and other resources for the creative development and delivery of education.

Each type of technology or medium has specific attributes which give it its power or effectiveness for certain purposes. Knowledge of these attributes will enable educators to design learning activities with strategies that make the most of these unique attributes. Determination of the type(s) of technology to be used in any particular program should be based on the following considerations:

- the needs of the learner;
- the nature of the content;
- the ability/needs of the teacher (presenter); and
- the feasibility dependent on the limits of the technology, the funds and other resources available.

It is possible, however, to make choices of technology which may actually **reduce** access rather than increase it, and this should be guarded against.

There are three major categories of communications technology based on the level and nature of the interaction involved:

(i) **Hard copy**: print, audiotapes, videotapes and computer disks. Computer-based education [CBE] of all kinds is included in this category. The interaction between learners and teachers tends to be drawn out over relatively long periods of time via postal correspondence. Increasingly, however, these methods are being combined with the use of electronic communications.

(ii) **Broadcast**: radio and television. The ABC, SBS and a range of commercial broadcasters have been transmitting education and training programs for many years by both terrestrial and satellite systems. In recent years, immediate interaction has been added through the use of phone-in or telephone 'talk-back' facilities.

(iii) **Interactive Teleconferencing**: 'teleconferencing' is a generic term for interactive communication by individuals and groups using some electronic form of communication. Interaction is immediate through these systems. The four major categories of teleconferencing are:

  (a) **audio teleconferencing** is interactive voice communication between individuals and/or groups. Loudspeaker telephones are required for groups, and any number of sites can be linked through the use of an electronic 'bridge'.

  (b) **audiographic teleconferencing** (also called 'enhanced audio' or 'audio plus') is achieved by combining graphics (facsimile, scanner, telewriter, slow scan television, computer generated, electronic white board) with audio teleconferencing. The microcomputer plus audio plus facsimile have become known in some parts of Australia as 'telematics'.

  (c) **video teleconferencing** (also 'videoconferencing') most commonly involves one-way video transmission with two-way audio (using telephones), like 'talk-back' television. Two-way video and multipoint interactive video are more common now using compressed video systems and increasingly multimedia, desk-top microcomputer systems through Integrated Services Digital Network [ISDN].

  (d) **computer-text conferencing** uses specialised software which extends the electronic mail and bulletin board systems to text conferencing through a computer-based system. This conferencing method has the major advantage of being asynchronous.

All these forms of teleconferencing are converging onto the microcomputer and being made increasingly feasible through ISDN networks within the next two to five years.

The challenge for educators is to design courseware which ensures that appropriate use of these technologies is inbuilt, and that their use supports interaction, participation and the achievement of the learning objectives.

In a sense, the form of transmission is not the critical issue in the learning process. All types of teleconferencing can be conducted through a range of terrestrial systems or via satellite. In most cases, Australia needs to consider using a combination of satellite and terrestrial systems. For many national projects in education and training one of the most feasible options worthy of consideration is to combine one-way satellite video with return audio and computer-text conferencing. The proposed '6th channel' for satellite television may provide this option. However, as suggested in Sections 5.2.2 and 6.1, every school needs a range of terminal equipment so that it can access networks for all forms of broadcast and teleconferencing.

1.3.3 Options and opportunities

There are five areas of application for communications technology:

(i) **education/training:** that is, active teaching and learning. With interactive technologies it is possible to import education and training to the learning setting (e.g. classroom) as well as to export it ('distance teaching'). Furthermore, interactive technologies can empower learners to send as well as receive and to initiate their own peer-to-peer self-help links;

(ii) **administration/management:** this includes meetings, interviews, briefings, project management, curriculum planning and development, courseware production, etc.;

(iii) **services:** support services from specialists for such things as guidance, counselling, advisory assistance, and information, can be improved through the use of technologies;

(iv) **research:** data collection, cooperative action research, exploratory analysis, assessing and processing outcomes, with a view to educational improvement, have all employed these technologies; and

(v) **social/entertainment:** sports coordination, social interchange, games and general entertainment can be facilitated.

Various ways exist for combining these technology options for education and training. Teleconferencing, for example, has been used extensively in North America for over 30 years and in Australia for about 20 years. In fact, the Schools of the Air represent a form of audio teleconferencing that has existed since 1951.

As described below, evidence is mounting both within Australia and overseas that the use of teleconferencing not only extends access to, and provides new options for, learning but also costs less than conventional means. Yet it provides equal or better achievement and satisfaction in learners when compared with face-to-face teaching and learning. A number of examples include:

- an Indonesian language project for high school students in Northwest Tasmania used audio teleconferencing to link students with their teacher at La Trobe over a period of a year. Evaluation showed that students achieved as well as if they had been in a face-to-face class, satisfaction was very high, while the cost was one-fifth that of any other option. Another outcome was that the local German/French teachers supervising the students also learned Indonesian;

- the Victorian TAFE Off-Campus Network has provided adult literacy and numeracy courses by audio and video conferencing for several years, including delivery into gaols. A program of adult literacy in 1987 using audio teleconferencing was reported as having twice the average retention rate at half the average cost per participant of other VTOCN programs;

- Universities in Ontario, Canada, have reported that when audio teleconferencing was introduced to support their correspondence courses, the drop-out rate fell from between 40-60 per cent to 10-12 per cent, the same as for face-to-face classes; and

- AT&T in the USA evaluated the use of teletraining for over 3500 staff using a national audiographics system in comparison with a traditional face-to-face approach. After the post test, findings included:
  - significantly higher performance from the teletrained group in comparison with those learning face-to-face;
  - equivalent perceptions of effectiveness in the two groups; and
  - a cost avoidance (saving) of over $1.8 million for the year (Chute, Hulick and Palmer, 1987).

The United States Congress requested its Office of Technology Assessment to analyse various technological options for distance education. In the resulting report, **Linking for Learning** (1989) the following findings which are relevant to Australia were listed:

- use of distance education methods and technologies in elementary and secondary schools has increased dramatically over the past five years, but many students and teachers still do not have access to much-needed expertise and information;

- rapid advances in technology are creating distance learning systems that are powerful, flexible and increasingly affordable, but no one technology works for every application;

- in most instances, distance learning appears to be as effective as face-to-face instruction in the classroom;

- while reaching a small number of teachers today, distance learning will greatly affect the teaching force of tomorrow, requiring further training and institutional support;

- state education agencies are both gatekeepers and catalysts for distance education;

- federal and state regulations guiding the developments of telecommunications infrastructure and services significantly affect distance education; and

- federal funding for distance education has been important, but modest.

Further examples of the use of the technologies in Australia are described in Section 3.3 and Appendix H of this Report.

This section has outlined the applications and opportunities of communications technologies. How might they apply to the professional development of teachers? The 'ideal scenario' which follows reflects an exciting range of possibilities.

1.4 The Ideal Scenario

Ideally, whether living in Roy Hill or Redfern, Brisbane or Batchelor, Perth or Penguin, all teachers seeking professional development or support will have access to continuing professional development activities and support to meet their needs.

The changing demands of society may well be stimulating these needs as educational systems seek to respond through mandatory curricular or administrative change. Alternatively, needs may spring from specific classroom situations involving an exceptional child or simply from a teacher's desire to complete an award or seek promotion. Teachers individually or in a team setting, through self-determining processes, will actively decide their own professional development needs within the context of the particular strengths and priorities of their schools.

Planning for professional development will be facilitated through a team approach across clusters of schools and at a system level. Communications technologies will allow close working partnerships to be developed between local school communities and support staff so that professional development activities utilising both local and specialist expertise can be organised, adapted or developed in response to need.

Coordination of professional development will be a special responsibility at school or cluster level. Advice and assistance with information retrieval, where necessary, will also be provided by the person in this role. A suitable basis for school TPD activities is likely to be available in most cases, a result of systematic, ongoing needs assessment and feedback. Where existing activities are not suitable, *consultancy support or collaboration in developing tailor-made activities* will be available.

Information on available programs will be readily accessible from databases of all relevant award and non-award education and training programs throughout Australia and overseas. These databases will indicate the source and mode of availability as well as the quality and credit value of all activities listed. A comprehensive range of activities will be available through a variety of delivery options. The actual site of learning may be the teacher's own school or a special location such as an open learning centre or a regional teacher support centre. It may even be the teacher's own home.

Informal collegial support and group problem-solving will be facilitated via networks linking teachers to support centres, education centres and their counterparts and colleagues in other schools. Teachers will be able to flag their interests and concerns and create dynamic linkages for information exchange.

When appropriate, teachers will be able to enrol in their selected activities electronically, online, and make arrangements for the most appropriate delivery modes which will also be timed for convenience. Electronic monetary transfer will simplify transactions for fee-paying courses.

Through distance learning and the use of appropriate communications technology, teachers' needs will be addressed whether they live in isolated rural or metropolitan areas. For example, varied delivery options may require enrolled teachers to attend over a ten week period two video conferences and four audio teleconferences after school on designated days, or take part in a computer-text conference, or complete exercises in a printed workbook accompanying audio or video tape presentations, or simply read a printed text book supported by individual communications with a tutor by electronic mail and telephone. Face-to-face meetings will also remain an option when required.

The knowledgeable integration of communications technology with program design will ensure effective, enjoyable learning experiences.

Credit for successfully completing activities might be deposited into a national Credit Bank for use towards a university award or for promotional purposes, if desired.

1.5 Significant Features of the Ideal Scenario

Certain features of this ideal scenario can serve as the basis for policy formulation. These are:

- professional development does not necessarily occur automatically; it is linked to career structure and personal or professional interests;
- teachers can self-regulate their professional development within their education systems through their choices among requirements, entitlements and options for professional development;
- distance learning options are available without regard to geographic location;
- a range of communications methods/delivery options is employed as appropriate, feasible and convenient;
- both information about TPD activities and the activities themselves are easily accessible to all teachers;
- a broad range of activities is available to meet both individual and systems needs;
- the implementation of various individual or group learning approaches is possible;
- learning can occur in formal settings (with the help of a coordinator) which may transcend distance through the use of communications technology;

- teachers as learners can interact to support each others' learning;
- informal information exchange is valued for teachers' professional development;
- learning is supported and enhanced through teacher-learner and learner-learner interactions;
- through a range of content and delivery options, teachers can engage in quality learning to enhance the quality of their teaching; and
- activities undertaken by teachers have value within a national cross-accreditation system, across award-granting institutions and employing authorities.

The list of selected features above reflects a systematic, but flexible, approach to professional development which should be realised by the year 2000. It is nested within a policy framework which would have been derived in the previous decade; a framework that allows teachers and systems' decision-makers to contemplate possibilities as they implement policy in their contexts at all levels. As such, the scenario, and the policy framework proposed in this Report, give general direction for TPD throughout the nation.

1.6 Summary

The objectives and understandings of the Project have been elaborated with a view to clarifying potential benefits of adopting an open access approach to teachers' professional development.

Communications technologies are potentially valuable tools for improving access to quality teaching and learning in all Australian schools, and **these communications technologies can successfully enable teachers' professional development as will be exemplified in the initiatives described in Section 3.3.**

The rationale for adopting an open access approach employing these technologies is the topic of Section 2, and even though there is as yet no national policy on either initial teacher education or the post-employment professional development of teachers, a coordinated national open access approach to TPD contains the potential to address many urgent needs.

Nevertheless, further research into the successful application of telecommunications to TPD remains an important area of investigation. However, in adopting these technologies, it will be necessary to apply the wealth of knowledge already available relating to the ways in which adults, in general, and teachers, in particular, learn and modify their classroom practice. Readers are referred to the Principles of Good Practice elaborated in **Teachers Learning** (1988) and reprinted in Appendix F.

Section 2 The Rationale for Adopting and Implementing an Open Access Approach to Teachers' Professional Development.

Major reforms are underway throughout Australia's socio-economic fabric that have wide-ranging implications for continuing education and training across all professions and industries. Some of these reforms are explored here for the way in which they are contributing to the mounting pressures for new approaches to professional development. New kinds and levels of services are indicated for all professional and industrial groups.

2.1 Changes in Education

Recent reform of education in Australia as part of the overall restructuring of the economy is proceeding by the systematic removal of impediments to the introduction of a unified national system of schooling, as heralded in **Strengthening Australia's Schools** (Dawkins, 1988a) and the preceding **National Policy for the Education of Girls in Australian Schools** (Dawkins, 1987a). The elements of educational restructuring comprise:

- collaboration through the Australian Education Council on national curriculum and assessment;
- restructuring of education departments;
- a focus on teacher quality and professional development for increased productivity;
- teacher appraisal; and
- socio-economic changes in the teaching workplace.

2.1.1 National Curriculum

Since the **Hobart Declaration on Schooling** (1989), which outlines common and agreed goals for schooling, significant steps towards a national curriculum have been taken with the first of the National Statements on Mathematics, released in May 1991. Curriculum mapping has identified significant commonalities across systems while resource auditing has highlighted the scarcity of resources, both materials and expertise, in priority areas such as LOTE, careers education and technology education. A white paper on Language and Literacy has also been produced (**Australia's Language**, DEET, 1991). By the end of 1993, national statements and assessment profiles in eight major curriculum areas are planned to be completed.

The now well-acknowledged dictum, *No curriculum development without teacher development* (Stenhouse, 1975) has significant implications for a national curriculum. TPD will be essential for the implementation of a national curriculum. Consequently, there will be an urgent need in all schools for non-award and award-bearing programs specifically targeted at these priority curriculum areas.

2.1.2 Focus on Teacher Quality

Demand for professional development from teachers, in the recent past, has been strong with around 22% of teachers undertaking award-bearing studies in 1987-88 according to the Australian College of Education profile on Australia's teachers (Logan and others, 1990). Award restructuring, however, to which government, unions and employers are committed, has heralded an unprecedented increase in demand for post-initial training courses for teachers and open access options are critical if these demands are to be met in an equitable way.

With regard to teachers' award restructuring, increased salaries for teachers are negotiated on the basis of increased productivity which may be demonstrated, as one line of argument, through increased professional development and participation in pupil-free days. The creation of Advanced (or Master) Skills Teacher (AST or MST) positions also reflects demand for professional development, although what counts as acceptable for this purpose may well be a matter of contention between teachers and employing systems. In Dawkins' view (1990a), as expressed in **Quality of Teaching: An Issue for All. An Initial Statement,** the focus should be the mainstream (national) curriculum.

As yet, uniformity of teaching awards among states has not been achieved nor is there consensus on the integration of professional development into teachers' awards and career progression. Even the accreditation requirements for initial teacher registration differ among the States. To further the goals of portability of accreditation and status, the National Project on the Quality of Teaching and Learning arising from the industrial process is continuing.

Although the increase in demand for TPD was anticipated by the Commonwealth (Dawkins, 1990a), no allowance for growth in tertiary places in education has been made within the Unified System of Higher Education beyond the 4% growth in places for teachers of mathematics and science. This compares unfavourably with growth allowances for accounting and engineering of around 11%. One consequence of this situation has been that state education systems in New South Wales, Queensland and the Northern Territory have found it necessary to sponsor additional places for teacher education through direct funding and negotiation with higher education institutions.

Teacher quality is currently being spotlighted as a lever for the improvement of the quality of education and educational outcomes for students. This is evident in recent reports focussing on teacher quality including the following, among numerous other Commonwealth and State commissioned works:

Teachers Learning: Improving Australian Schools through Inservice Teacher Training and Development (1988),
Teacher Supply and Teacher Quality in Australia (1989),
Teacher Quality: An Issues Paper (1989),
Teacher Education in Australia (1990),
Australia's Teachers. An Agenda for the Next Decade (1990),
The Shape of Teacher Education: Some Proposals (1990).

These reports consistently call for an increased commitment from employers to teacher education and the determination of some minimum basic requirement for post-initial professional development in terms of either dollars or time.

However, despite these reports and others stretching back to the National Inquiry into Teacher Education in 1980, no such firm commitment to TPD has been forthcoming. Being a 'behind the scenes' activity, TPD is an area among the first to be affected by budgetary restraint.

Teacher quality is also expected to be an important element in the new Effective Schools Project. This is expected to be a significant initiative in that the resources allocated to that Project are over three times those to be expended on its counterpart, the Quality of Teaching and Learning Project initiated by DEET.

2.1.3 Restructuring of Education Departments

Additional demand for professional development from teachers has also arisen following devolution of authority and budgets to schools of State and Territory education systems throughout Australia with consequent needs for re-education of teachers for these altered roles, for example in improved leadership and management skills.

The details and implications of these managerial changes will be further elaborated in Section 3.2.2 of the Report. Suffice it to say here that arrangements for TPD will need to be compatible with the trends towards consultative management practices, the trimming of central departments, devolution and accountability and a preference for 'in school' TPD activities.

2.1.4 Teacher Appraisal

TPD needs to be linked into all these changes, and in particular to teacher appraisal processes which are another source of pressure on teachers to continue their professional development. It should be emphasised however, that:

- teacher appraisal should be about self-accountability or assessment to improve the quality of their own practice;
- evidence is generated by teachers who develop their own profiles; and,
- teachers will use profiles for a variety of purposes such as:
  - professional standing;
  - improvement of practice; and
  - promotion (and so on).

The pressures of micro-economic reform, especially in regard to the national curriculum, re-structuring of educational administration systems and the thrust for school improvement through increasing teacher quality are compounded by changing curriculum priorities in response to rapid changes in society.

2.1.5 Teachers' Work

This indicates a final area which impinges upon demand for increased provision and access to TPD. There are a number of socio-economic changes which have noticeable effects on the nature of teachers' work. These include:

- increased retention in the post-compulsory secondary years, mature age entry and the trend for essential pre-vocational skills of the TAFE common curriculum to be taught in schools, which is generating pressure;

- LOTE, technology education, gender equity, environmental education, Asian studies, literacy education, mathematics and science have become curriculum priorities with consequent shifts in teacher expertise required; and added to this is the need to keep pace with the rapid obsolescence of knowledge, the information explosion and rapid developments in information technology and processing.

In recognition of the needs of the wider community for continued education and skill development, the Training Guarantee Act sets a minimum requirement for all employers including schools and school systems with a payroll in excess of $200,000 to spend a minimum of 1% of payroll on training. This requirement may well rise to 2%, the national goal, within the decade.

In addition, the focus on education as a productive industry highlights:

- education to promote scientific advancement and development of technologies as a means of maintaining and improving Australia's competitive position in the world;

- the export of education, training and related expertise to assist in reducing the trade deficit;

- the need for workers to be mobile and flexible and undertake various jobs in their life histories, therefore requiring multiskilling because of predicted structural unemployment; and

- the changing age constitution of the professional teaching workforce, which exacerbates the effects of rapid change (Logan and others, 1990).

All of these changes require a significant renewed emphasis on professional development. These needs are especially pronounced for rural teachers, who generally receive less adequate provision than their city counterparts despite differential funding allowances.

However, the need for ongoing professional development is not confined to the teaching profession. Across many Australian professions, the need for increased incentives, provision and access to professional development is recognised and is being addressed, as described in the following section.

The responses of other professional groups offer models of potential value to teachers both in ways of increasing access and participation and in generating ideas for new approaches to the provision of professional development opportunities.

2.2 The Continuing Professional Development Response of Some Australian Professions and Industries

2.2.1 Participation in Professional Development

Participation in professional development is being encouraged through a variety of models. One is to make membership of the professional association conditional upon the completion of a specified minimum amount of continuing professional development activity. This is the case, for example, for the Institute of Chartered Accountants, and the Royal Australian College of Obstetricians and Gynaecologists. Similarly, the Law Society of New South Wales adopted compulsory professional development, although their resolution was effected through legislation rather than the charter of the professional organisation.

These professional groups have 'voluntarily' adopted compulsory professional development because of pressures not dissimilar to those affecting teachers. Prominent influences are the rapid expansion and obsolescence of the knowledge base, the introduction of new technologies and equipment, the inability of tertiary courses to prepare members fully for professional practice, the desire to retain control and circumvent governmentally-mandated professional development and the need to demonstrate and promote professional credibility.

An alternative model for encouraging participation is to offer recognition or special status for members undertaking professional development. For example, 'Corporate Member' status of the Institute of Engineers Australia requires completion of 150 hours of continuing education on a three year rolling program, while the Australian Society of Accountants offers multilevel membership status with obligations of 60 hours professional development per triennium for 'Certified Practising Accountant' status or 120 hours in the same period for specialist member status and holders of 'Public Practice Certificates'.

In some professions compulsion applies only in specific circumstances such as members wishing to return to active practice after a period of absence. For example, in nursing in several states, legislation is either in place or proposed to require members of the profession who have not practised for five years or more to demonstrate mastery of a refresher course before either their registration is renewed (e.g. Western Australia) or they are issued with a certificate/licence to practise (e.g. Victoria).

Any mandated or coercive system for continuing education must face the difficulties of providing access to all potential candidates. Notwithstanding this, there are numerous examples overseas where continuing professional development is compulsory to obtain and retain a licence to practice. Overseas precedents for this exist also in the teaching profession. (**A Study of Continuing Education for Selected Occupations**, 1989.)

Whether or not continued professional development is compulsory, strong encouragement and recognition generally accompany arrangements for meeting the increased needs for professional development which are widely recognised.

The activities of several selected professional groups were surveyed by the Project to provide insights which might be applicable to teachers. It is not intended here to present a complete description of the activities of these professional groups but rather to document a variety of policies and approaches of possible interest for their potential application to teacher professional development. The information has been compiled from the following data sources:

- telephone interviews with officers of the associations;
- policy documents and informational material provided by the associations and software suppliers; and
- the text, **Continuing Professional Education: Promise and Performance,** (Brennan,1990).

Some common features of these approaches have been identified and are listed below. The implications for the professional development of teachers will subsequently be explored in Section 2.3.

2.2.2 Common Features of Professional Development in Selected Professions

Professional associations actively engaged in providing continuing professional education generally exhibit a number of common features, namely:

- a policy, position paper or mission statement on professional development;
- a management infrastructure with responsibility for professional development, which generally comprises national, state and regional offices with personnel to coordinate activities, disseminate and collect information and undertake needs assessment and feedback;
- a database for professional development;
- approved courseware which has been both internally and externally generated;
- mechanisms for formal recognition of participation in professional development;
- delivery systems which increasingly include open access or distance options and which may be their own system or contractually arranged;
- collaboration with tertiary institutions for course development and/or delivery as well as recognition towards formal awards.

Brief vignettes of professional development policies and provisions for engineers, nurses and obstetricians exemplify these points.

2.2.3 Professional Development of Engineers

The Institute of Engineers Australia [IEA] offers awards for professional development in its own right. The awards which will be registered on the Register of Academic Tertiary Education are a Certificate (available on successful completion of three semester units) and a Graduate Diploma (requiring six semester units) of Engineering (Professional Development).

A national Directorate of Engineer Education in Sydney and regional offices are being established, initially making use of the existing 'external' courses of the DECs through a pool of IEA-approved units. Other universities may also propose units for approval in both traditional and flexible presentations (e.g. open learning modules, residential schools, etc.).

Through its Distance Education Project, the IEA is employing strategies for distance delivery to meet the needs of all members. Possibilities include computer-based learning utilising open learning networks (e.g. in Queensland) and satellite delivery of IEA commissioned courses (through the University of Technology, Sydney, Project). Since course participation is on a user-pays basis, no difficulties with quotas are encountered.

2.2.4 Professional Development of Nurses

The Royal Australian College of Nursing Australia has developed, adopted and implemented a comprehensive policy on continuing professional development which covers roles and responsibilities, teaching and learning principles, objectives and strategies, program design, assessment and evaluation.

In order to cater to a widely geographically-dispersed membership including those in isolated rural areas without electricity and only radio telephone facilities, it was necessary to adopt basic distance learning approaches. As a preparatory measure, the College undertook to map the available learning resources. This information is available but unpublished and may be useful for further development of a plan for TPD.

The Royal College of Nursing Distance Education network is linked to the Australian and South Pacific External Studies Association ASPESA. Courses are designed to fulfil academic requirements for credit but do not as yet count towards an award.

Continuing education is offered by the College mainly through audio and video tapes and audio teleconferencing, but satellite television for areas without mains electricity is also being investigated.

The Western Australian Chapter of the College uses a computer managed learning [CML] system, based at Curtin University, which is the centre for an open learning network for the refresher ('re-entry') course for Western Australian nurses who have not practised for in excess of five years.This example deserves further detailed description because of its potential as a model for teachers similarly wishing to re-enter teaching.

The Computer-Based Training System [CBTS] software using a VAX 11/750 Mainframe manages the 'learning' of students by storing student records and individual contracts, processing individualised tests, providing immediate feedback on test results, analysing overall test results for course evaluation and providing communication between student and instructor (Hawley, 1990).

Students may use their own personal computer, a learning centre (six so far), or, for remote students, hard copy tests which are mailed to a nominated supervisor.

Following a residential orientation session of two weeks, at which students receive the twenty-two topic modules and instruction in both the use of the system and study skills, students enter a 'challenge period' during which they are encouraged to test their mastery of as many of the test modules as they like. In this way, students can be credited for prior learning and avoid repetitious study of material they already know. Students then decide their own program of study, record this on a personal contract and progress at their own rate. A large bank of test items is available from which random selection of items and random generation of the specifics of each question type ensure individualised yet comparable tests. The CML system has the advantages of cheapness, standardised testing and the potential for frequent updating. Minimum skill is required to use the technology.

The program was purchased from Grant MacEwan College in Edmonton, Canada, for $500.00 and subsequently adapted for use in Western Australia. A cost analysis of the Canadian system three years into the program in 1985 (Hawley, 1990) showed that despite high initial development/adaptation costs, the cost per student was only a third that of previous on-campus courses.

Another nurse education program exists in Queensland where since 1987 the Health Department has used satellite video with talk-back audio for professional development. In 1990 this group introduced the use of the Optel computer-based audiographic system for multipoint interactive training programs.

2.2.5 Professional Development of Obstetricians and Gynaecologists.

Royal Australian College of Obstetricians and Gynaecologists membership requires the accumulation of 150 cognate points over a five year Continuing Certification period. Points may be accumulated through a wide and flexible range of content and teaching or learning methods, including distance learning. Credit is given for teaching and publication activities; for participation in conferences, workshops and hospital continuing education meetings; for participation in supervised learning projects and quality assurance programs; and for the completion of self-assessment tests. The program emphasises self and peer assessment, flexibility and mandatory involvement. Print and audiotapes are the predominant distance techniques used, since survey work established a preference for these modes. A computer (email) bulletin board provides professional updates.

2.2.6 Industry Training and Professional Development

The use of distance learning options is also growing rapidly in industry. A few examples will indicate the type and scope of these activities.

- A computer-managed learning system provides for the training needs of plumbers in Victoria through TAFE centres.
- Nissan and Ford are supporting CML delivered long-distance study for the Bachelor of Business degree in Technology Management for their employees. This is a joint venture of Victoria College and the Box Hill College of TAFE.
- Karratha College serves the Pilbara and Kimberley regions through its Livenet project for satellite videoconferencing, particularly in collaboration with Hammersley Iron, and a CML project for offshore oil and gas workers on the North Rankin A platform. Approximately twenty hours of vocational and general interest courses are currently provided through Livenet. Educational television, interactive videodisc and compressed videoconferencing are being evaluated. Industry-College partnership has been considered vital to these developments, and the project provides a model of effective cooperation. (Gunningham, n.d.)

2.3 Implications for TPD

The use of innovative delivery systems is obviously growing. Accountants, librarians, the Australian College of Education, the Queensland Institute of Educational Administration and many businesses utilise audio and video teleconferencing for training and professional development activities. A different approach is offered by the Family Medicine Program in Queensland, which offers live satellite broadcasts to rural general practitioners in fifty-three receiving centres throughout Queensland and Northern New South Wales through TSN 11 and AUSSAT. One-way live video broadcasting in conjunction with two-way audio enables participants to speak directly with presenters and view practical demonstrations or graphic materials prepared in advance.

The formalisation of the need for continuing professional development in the Training Guarantee Act and the expanding infrastructures for distance delivery elaborated in Appendix G are likely to encourage increasing use of satellite videoconferencing, audio teleconferencing, audiographics ('telematics'), interactive video disc and computer managed learning for professional development.

A significant 'gearing up' period which includes training, will be likely as professional groups explore, plan, design, implement and promote such programs. It is possible, however, for all professional groups to use the same technological infrastructure.

But with respect to the teaching profession, there is no flourishing, 'peak' professional association capable of such strong influence over the profession as evident in some other groups. Candidates for that role either lack the numbers or display an alternative focus. The Australian College of Education and the Australian Council for Educational Administration, foster professionality, which now may be defined as 'the attitudes towards professional practice among members of an occupation and the degree of knowledge and skill which they bring to it' (Houle, 1980, p.44). However, their low membership of around 3-4%, (France, 1990) limits their potential influence. On the other hand, the Australian Teachers Union have a high proportion of representation but have not been able to do much professional work because of the different school systems. Both the industrial and professional roles of the ATU are now growing.

The national teacher professional associations are fragmented along subject lines with well over 100 different groups. These associations provide a valuable contribution to professional development, and are well supported with 37% of teachers registered in at least one professional association and 45% in two or more (Logan and others, 1990). However, their splintered nature and specialist focus are not conducive to a coordinated approach to professional issues.

A national body along the lines of the New South Wales Joint Council of Teacher Professional Associations may be a workable model for coordinating these professional associations across Australia. Links from such a national council to the ATU and Independent Teachers Federation [ITF] could be a productive mechanism for strong national action by teachers. Discussions along these lines are underway and the notion is being promoted by NBEET.

Where teacher groups lack the capacity to direct the profession, teacher employers have been reluctant to introduce any compulsion for continuing professional development. Such a move would entail massive resourcing implications, especially to guarantee access to professional development, and would more than likely encounter significant resistance because of the loss of self-determination by teachers and negative reaction to the appraisal systems likely to follow.

Some resolution of these issues may be possible through the budding state-level consortia described in Section 3.2.4.3.

2.4 Summary

There is an urgent need for increased provision of, and access to, professional development for teachers in Australia. As in other professional groups and industry, these needs can be efficiently met through a coordinated national approach which includes an open access infrastructure to complement existing professional development activities and resources for teachers. It is imperative, due to the urgency of these needs and in order to coordinate responses already evolving in separate systems, that a cooperative national open access approach be quickly adopted and implemented. Increasingly, all professions are discovering that the key to meeting the need for professional development is by opening up access, particularly through the use of communications technology. Distributed delivery for education and training into the place of work is an idea whose time has come.

The key to a successful response, providing far-reaching, equitable access to professional development is undoubtedly communications technology. No other alternative is as flexible, potentially pervasive, cost efficient and effective as this 'real time' alternative.

Telecommunications facilities, in combination with sound distance learning practices, adequate courseware and a responsive coordination mechanism are all essential and together formulate the basis for an open access approach. The utility of open access, however, is well recognised as evidenced by its increasing use for continuing professional development in many Australian professions and trades. In the existing policies and practices for TPD and in the emerging trends and issues, the foundations for an open access approach may be found.

The Section which follows describes the current situation across Australia in relation to TPD, describes and gives examples of open access developments, and points to the opportunities which currently exist for a cooperative national approach.

Section 3 Existing Foundations for an Open Access Approach

The foundation of a cooperative, national, open access approach to TPD resides in current policies, practices, initiatives and tensions as well as in common and agreed directions for future development.

The Australian system of state-federal relationships and responsibilities for education forms the political context of policy development. Present local, state and national systems' needs and practices form the starting point of any coordinated change. This chapter will examine aspects of current professional development policies and provisions for teachers with a view to identifying the bases for a common open access policy. The intention is not to override or standardise existing policies and practices. It is likely and advantageous in many ways that diversity remains. The task is to identify directions for change and mechanisms to coordinate and interweave existing policies and provisions towards common goals. A complete audit of existing resources and practices is not possible here. That mapping task should be referred to the Australian Education Council [AEC] Working Party and funded as a new project.

The overview of TPD which follows has been compiled from information provided by consultants to the project, from policy documents and reports, from written responses and from interview data. While acknowledging the richness and detail of these reports and the scope and comprehensiveness of provision for teacher professional development across Australia, this overview is necessarily brief.

3.1 Policies for Teachers' Professional Development

Constitutional responsibility for schooling rests with the states. The Commonwealth Government, although not an educational provider, is nevertheless the largest single underwriter of education in Australia with full responsibility for the funding of Higher Education, including teacher education courses, and with a significant financial responsibility for schooling through its Recurrent and Capital Grants to each of the Australian states and to other school systems. The extent and direction of Commonwealth Government funding is thus a significant lever in the implementation of Commonwealth objectives for schooling (Boomer, 1987) which includes the professional development of teachers.

Recent reform in virtually every Australian State and Territory and at the national level has affected organisational structures, policies and procedures for the professional development of teachers.

All stakeholders, namely employing authorities, providers, higher educational institutions, teacher unions and professional associations and parent and citizen groups may formulate policy on teacher professional development. Proactive policy, however, issues mostly from employing authorities and governments, the holders of the purse-strings. Nevertheless, the policy positions of other groups promoted through the leverage of collective bargaining and lobbying also exert considerable influence.

Provision for TPD in Australia is organised at national, state, regional and local levels; however, few specific policy documents exist.

The processes of policy formation may involve commissioning research or consultancy advice on ways to proceed. Usually, as the recommendations of such reports are implemented through decisions, memos and action, policy is created in a scattered, ad hoc way, but not necessarily compiled in a concise form or implemented in a systematic manner. Recent emphasis on human resource development and strategic planning may lead to increased documentation of policy. However, at the present time, many state systems are still in the formative stages of issuing reports and recommendations, and policy is more implied in these documents rather than clearly articulated. This current state of flux also blurs the distinction between policy and its enactment.

3.1.1 National Level Policy

At the national level, policy documents on teacher education have been available from the Commonwealth Government only about Aboriginal and Torres Strait Islander teachers, and from the major political parties, unions and parent groups.

Provider organisations (e.g. the National Catholic Education Commission and the National Council of Independent Schools of Australia) appear to have little specific consolidated policy at the national level since responsibility for TPD falls largely at their associated state, regional or individual levels of school organisation. System providers which do carry responsibility for professional development at the national level, such as the Seventh Day Adventist and Lutheran Churches tend to formulate policy as the need arises, relevant items of policy being scattered rather than collated.

The AEC has received the proposals of its Working Party on Teacher Education (NBEET, 1990) but these have not been accepted as policy. A national collaborative perspective has been evident in the activities of the AEC since the **Hobart Declaration on Schooling in Australia** (1990) and the introduction of Resource Agreements with the Commonwealth conditional upon financial and educational accountability (DEET, 1990).

The Australian Teachers Union has a clearly articulated policy on teacher education which includes professional development. This recognises the essential value of both formal activities and informal reading, discussion and reflection as well as the critical importance of the school climate, culture and the work environment (Australian Teachers Union [ATU], 1991).

Only a few national bodies have formulated policy on distance education. None has a specific, comprehensive policy on distance education for teacher professional development. However, there are some items of policy referring to the need for professional development relating to technology or referring to the use of technology for professional development, especially with regard to meeting the needs of rural teachers (e.g. The Australian Teachers Union Teacher Education Policy).

In contrast to the dearth of formal policy on teacher education at national level, there exists a plethora of reports and recommendations together with submissions and reactions from various national bodies indicating their respective positions on numerous proposals (such as the associate teacher or internship model of teacher education) (NBEET, 1990b).

To date, the major policy recommendations of reports stretching back to the National Inquiry into Teacher Education in 1980 have not been endorsed. There is, therefore, very little policy on TPD but there is continued interest by the Commonwealth in developing policy in this area as expressed in **Quality of Teaching: An Issue for All. An Initial Statement** (Dawkins, 1990a), in which award restructuring and negotiation are identified as important mechanisms for achieving national policy. The Commonwealth does, however, have relevant policies in other areas such as industry, schooling and higher education as discussed in this section below.

These policies frame the context of TPD. They inform the management of education as an industry and the micro-economic reform of schooling and higher education within an overarching philosophy of economic rationalism and with a focus on social justice. The relevance of these policies needs to be elaborated.

3.1.1.1 Commonwealth Industry Policy

The Commonwealth Government (Dawkins,1988b) articulates the Commonwealth's role in education to be in areas where benefits are to society as a whole, as well as to specific disadvantaged groups. It sees the employer's responsibility to be the training of the workforce of direct benefit to the particular industry but believes that where training is also of personal benefit to individuals, (for promotion or salary progression, for example) then the employee should also contribute to training by:

- accepting a lower wage while training;
- training in their own time;
- paying part of any fees involved; or
- trading wage increases for increased training opportunities.

Teacher participation in, and support for, their own professional development is significant and has been documented as will be described in Section 3.2.3.

This Industry Training Policy, together with the federal government's emphasis on equity, shapes the Commonwealth's position in negotiating roles and responsibilities for TPD which are critical issues for an open access policy.

3.1.1.2 Commonwealth Schooling Policy

The federal government's equity policy also frames policy on schooling and guides Commonwealth Programs for Schools aimed at alleviating disadvantage.

Strengthening Australia's Schools (Dawkins, 1988a) and **The National Policy for the Education of Girls in Australian Schools** (1987a) have already been mentioned in the context of micro-economic reform and increasing post-compulsory retention as contributing to the pressures for professional development of teachers and the rationale for an open access approach.

The implementation of these policies through a corporate planning managerial style involving Resource Agreements linked to Commonwealth Government Objectives is shaping the structures and management procedures for provision of TPD activities. These aspects of current reform in education will be further elaborated in Section 3.2.

3.1.1.3 Commonwealth Higher Education Policy

Higher Education Policy is documented primarily in **Higher Education: A Policy Statement** (Dawkins, 1988c) which effectively established a Unified National System of Higher Education in Australia. This statement was accompanied by introductory discussion papers (Dawkins, 1987) and supplementary statements on funding (Dawkins, 1990 b,c,d). Higher Education non-full-fee-paying award courses are funded by the Commonwealth and balanced through negotiations involving educational profiles, equity plans and growth bids. Accountability monitoring is implemented through student statistical collections and performance indicators to compare supply with demand predictions and assess progress towards achieving government objectives such as equity and increased participation. Through the Higher Education Contribution Scheme, fees now apply to university studies.

3.1.1.4 Commonwealth Distance Education Policy

These Higher Education policy statements also initiated the rationalisation of external tertiary award courses to create a system of eight Distance Education Centres [DECs] co-ordinated through the National Distance Education Conference [NDEC]. The restructuring was designed to capitalise on economies of scale and build centres of expertise. Non-DEC specialist providers are required to make contractual arrangements with the DECs for external course development according to prescribed specifications for sharing Commonwealth funding for external student places: an 85:15 funding split between non- DECs and DECs in 1991 which is projected to shift to 75:25 in 1992 (Dawkins,1990b). In practice, negotiations between DECs and non-DECs apportion funds according to the exact services required (Johnson, 1991).

At present, external and internal student loads are funded at the same level. There is the general perception in the community that the Commonwealth Government sees the external studies option as being cheaper, and that indeed it is cheaper. However, the Harwest Report (1991) has found that external studies is only 1% to 10% cheaper. Whereas, it was mooted that the Commonwealth government may reduce funding for external students to capitalise on presumed cost efficiencies of the distance mode of delivery, there is no policy for such action to be taken. The policy on distance education and its perceived possible disadvantages in funding has led to the closure of external studies at some institutions while others have created 'flexible modes' of internal study to side-step the DEC policy. An unintentional outcome appears to be the stimulation of more flexible delivery options for internal students, including the provision of packages of learning materials previously restricted to external students.

This Project discovered a large body of opinion amongst DEC representatives, specialist providers, state government representatives, interviewees and state consultants that the DEC model is flawed and is impacting negatively on the extension of higher education to the wider community. Mr Baldwin, the Commonwealth Minister responsible for Higher Education, also appears to support a deregulation of distance education in his reported statement that all universities should consider employing methods normally associated with distance education rather than continue to build expensive buildings on campus (Baldwin, 1991). This position is supported even by the original proponents of rationalisation who now believe that deregulation of the external studies industry is necessary and in line with evolving open access mechanisms (Johnson, 1991).

3.1.2 State Policies

Little formal, documented policy was unearthed from state employing authorities although Sout Australia is expected to release its professional development policy shortly. Each of the five area offices in South Australia has established priorities and will further develop their action plans in the light of the new professional development policy.

In Victoria, the report of the Working Party on Professional Development acts as de facto policy providing a set of guidelines for regions to develop professional development plans. The sum total of regional plans constitutes the state plan. The report of the Ministerial Task Force on the condition and status of teaching in Western Australian Government Schools (November, 1990) suggests policy principles for professional development in Western Australia, while the New South Wales Ministry of Education, Youth and Women's Affairs **Teacher Education and Strategies** (September, 1990) also makes a number of proposals.

In Queensland and Tasmania the current focus is on restructuring the whole system rather than consolidation of policies on professional development.

Common policy themes in these reports focus on the need for:

- professional development of teachers to be a shared responsibility;
- forward planning;
- increased commitment or strengthened capacity to increase participation in professional development;
- collaboration with HEIs and professional associations; and
- accreditation of employer TPD courses.

The use of distance learning and telecommunications for professional development receives limited specific attention. One example, however, is found in **Distance Education for Victorian Schools**, which specifies the use of integrated flexible delivery methods to improve the quality of teacher training, and outlines strategies and outcomes.

In the Northern Territory, proposals regarding the role of distance learning in TPD do not see the distance mode as central; however, its use is to be increased. It is proposed that distance learning enhance rather than replace current provision using, initially, a relocation of existing resources rather than any additional funding allocation (**Northern Territory Department of Education, Strategic Plan, 1991-**

93). Through liaison with TAFE, Imparja and the ABC, resource sharing is proposed but plans to develop, convert or acquire distance mode courses must also proceed without additional funding.

In the Northern Territory large proportional expenditures on travel for face-to-face activities and exchanges are justified for their therapeutic value in relieving professional and social isolation. But for many remote schools, it is impossible to withdraw staff without closing schools. Expenditure on travel is to be curtailed to recoup, in part, the additional costs of award restructuring and to provide funds for professional development via telecommunications.

This tight budgetary situation is typical of many states.

3.1.2.1 Non-Government Schools

State policy of the Independent Schools' Associations recognises the autonomy and responsibilities of individual schools, and the shared responsibilities of employer and teacher. Their policy recognises the need to apportion responsibilities and benefits between the school and individual teachers. This issue, together with release time and class supervision are items of contention with the Independent Teachers' Unions.

State offices of the respective Catholic Education Commissions recognise a high level of autonomy for Catholic Schools. Formal policy on professional development was difficult to find, the closest being the position paper of the Queensland CEC which considers the need to encourage, empower and adequately resource local initiatives while planning for sufficient ongoing central coordination and support.

3.1.2.2 State Unions

Unions call for sustained and adequate commitments, equitable access and democratic decision-making regarding professional development as well as more flexible accreditation mechanisms. The need for professional development to accompany new curricula, and for beginning teachers, Aboriginal teachers and those re-entering the workforce is stressed as are the professional development needs of individual schools as compared to system needs. The need for adequate replacement supervision is recognised, but unions believe this should not lead to infringements upon teachers' own time.

A number of state teachers' unions acknowledge that primary responsibility for provision of non-award activities lies with the state employing authorities while the role of the Commonwealth arises in priority areas.

The discussion will now turn to the management and provision of professional development of teachers as distinct from formal documented policy.

3.2 The Management and Provision of Resources for Teachers' Professional Development

The resources and activities available for TPD in Australia need to be described within the context of the management structures through which these provisions are planned, developed, organised, co-ordinated and accessed. The major sources are higher education and state employing authorities.

Use of telecommunications for TPD has been limited to date except for a few notable trials, traditional external studies and annual teleconferences. The Western Area of South Australia reported increasing use of networks which are regarded as essential tools, however; most professional development occurs in the face-to-face mode. Distance learning resources and applications for TPD are the topic of Section 3.3 in this Report.

3.2.1 Higher Education Provision of TPD

Formal tertiary courses are an important resource for TPD. Through the Unified System of Higher Education in Australia, the Commonwealth virtually directs this higher education industry. Higher Education Institutions, although autonomous, are therefore subject to the levels and priorities for funding determined by the Department of Employment Education and Training. The HEIs prepare mission statements giving reference to the Commonwealth Government's objectives for Higher Education and consult with the Department on their educational profiles, equity plans and growth bids.

The agenda for consultations approved by the Higher Education Council covers teaching activities, the impact of the Higher Education Contribution Scheme, building priorities, amalgamation issues, distance education provision, equity, research activities, credit transfer arrangements and graduate destinations. Growth bids and distribution of enrolments across broad fields and levels of study are discussed with institutions as a precursor to the Council advising the Minister on funding allocations for following years. The Council advises the Minister on measures to maintain existing levels of opportunity with respect to demographic and school retention rate projections and possible redistribution of enrolments to meet shifts in undergraduate/graduate demand (NBEET, 1990).

Annual Student Statistical Collections, together with reports such as **Teacher Supply and Teacher Quality in Australia: Social and Economic Issues** (Burke, 1989), provide the statistics required to assist in these negotiations. The Performance Indicators Research Group of the Higher Education Council, comprising representatives of the Council, DEET, and The Australian Vice-Chancellors' Committee is monitoring the development of measures of educational outcomes, quality and performance to assist in the management of Higher Education.

These negotiations provide one mechanism through which the post initial professional development of teachers could be prioritised. Teacher education in mathematics and science is currently a priority area for growth. Alternative mechanisms available include direct negotiation between state employing authorities and HEIs for additional places for TPD or increased sponsorship of non-award activities. The resolution of these funding issues will be dependent upon negotiated responsibilities.

Additional funding in the 1989-91 triennium has been available to HEIs to improve participation of educationally disadvantaged groups (which includes rural teachers) through the Higher Education Equity Program, however the impact of this program on participation by rural teachers is not known.

The Higher Education Contribution Scheme [HECS] now applies to university studies and needs to be considered in TPD policies or activities. Although HECS appears to have had an initial negative effect on education enrolments in its introductory year, 1989, that trend was reversed in 1990, for teachers as well as others and the Higher Education Council concluded from the 1990 statistical data *that HECs has not had an adverse impact on the size of the system* (Dawkins, 1991: p.7). The Department of Employment, Education and Training through postgraduate study awards provided 4,000 scholarships for TPD in 1989 (**Australian National Report on the Development of Education**, 1990). These include HECS exemption scholarships for teachers.

Commonwealth equity strategies for rural education as summarised in **A Fair Go** (1989) also aim to improve facilities for rural teachers. Growth in opportunities for rural people to access 'external' study is a priority. Databases on tertiary courses are being investigated, while through the Rural Education and Training Program, $4.75 million will be directed to industry, education and community groups to develop courses featuring innovative delivery methods. Through Resource Agreements, cross-sectoral sharing of resources and cooperation in credit transfer are also being encouraged between HEIs and TAFE and between schools and TAFE. These changes should reduce some of the barriers to study encountered by teachers transferred from place to place in country areas.

3.2.2 Higher Education Providers

This individual or private level of study has been the accepted role of the **Higher Education Institutions** through courses offered for upgrading or higher degrees and post-graduate diplomas. In addition, as noted by Johnson (1988), tertiary staff engage in an impressive array of non-award activities. However, this accounts for less than 2% of the informal activities attended by teachers in the ACE survey (Logan and others, 1990). The over-demand for HEI formal award courses and the lack of funding for their involvement in non-award programs are no doubt significant in this regard.

New state awards for teachers provide incentives for upgrading to four-year status through either more rapid progression to the top of the scale or higher ceiling rates of remuneration. The distance mode of study remains popular for this purpose (Logan and others, 1990), even for metropolitan teachers. But at the present time, demand for places far exceeds supply (refer to Section 5.3.5).

External courses were to be coordinated, standardised and rationalised following the 'White Paper' on higher education (Dawkins, 1988c). This is proceeding through work such as NBEET's discussion paper, **Course Length and Nomenclature** (1989) and NDEC's Gap Survey to identify overlaps and deficiencies in course provision. The quality of external courses is the focus of another NDEC project aiming to identify determinants of quality and to establish standards.

The Commonwealth has provided $2 million for a two year pilot Open Learning Project to extend access to selected undergraduate tertiary courses. Following submissions in March 1991 a consortium of HEIs and the ABC was selected, and delivery of courses will commence in 1992. This broadcast television option may demonstrate some new possibilities for TPD.

While this private study role for HEIs still predominates, some institutions (e.g. the Centre for Advanced Teaching Studies [CATS] in Tasmania) have been offering degrees involving collegial, 'school-based' systematic enquiry into classroom practice. Collaborative development of professional development programs for teachers by HEIs with state employing authorities is also growing. The Northern New South Wales Centre for Professional Development in Education was established when the University of New England, Northern Rivers, and the regional area office recognised that:

> *they were pursuing compatible agendas in extending teacher education, and that the resources separately available to each could be cooperatively deployed for mutual benefit.* (Klich, 1990, p.1).

The HEIs are thus beginning to make the transition to support collegial professional development activities in schools. The challenge for an open access approach will be to do this through distance education. Distance courses for individual, private study are already incorporating interaction for their students, both with tutors and between peers and this will serve as a foundation of experience and expertise.

The development of key centres or centres of excellence in education based at HEIs is also focussing on the professional development of teachers. Some examples include CATS (Tasmania), PACT (UCSQ), and the Centre at UNE (Northern Rivers). Such centres will be competing for recognition as National Centres for Excellence and subsequent institutional and government funding.

3.2.3 Non-Award Provision

3.2.3.1 Commonwealth Provision

A direct contribution to non-award TPD was made by the **Commonwealth Government** between 1974 and 1986 through its Professional Development Program. Although restricted in its later years to targeting professional development in relation to Commonwealth Government objectives such as ESL, Special Education and the Participation and Equity Program (Ingvarson and Coulter, 1987), it nevertheless made a significant contribution to TPD in Australia. After the closure of the Professional Development

Program in 1986, and until 1989, TPD was targeted for Commonwealth support through the system of Betterment Monies in States' Recurrent Grants. However, the movement towards corporate managerialism, devolution and accountability has brought the end of these targeted funds for TPD. In 1989 the current system of Resource Agreements linked to Commonwealth objectives and accountability came into force.

In addition to funding Higher Education and government and non-government schools through the General Recurrent and Capital Grants Programs, the Commonwealth also supports TPD through its Commonwealth Programs for Schools which may include professional development of teachers. Two of particular relevance are the Education Centres Program and the Country Areas Program. Commonwealth funding accounts for almost 25% of the public expenditure on schooling (Burke, 1989); however, the proportion of funding directed specifically for TPD is not discernible.

Twenty-three **Commonwealth Education Centres** received $2.06 million in support in 1990 and it is expected that this level of funding will be maintained in real terms but without growth. Professional development of teachers is not the sole function of these Centres and their professional development services are neither centrally determined nor coordinated. Centres develop programs in response to local needs and liaise with State Education Departments. They provide 'neutral territory' for partnerships.

There is little involvement in distance education in the Centres, but there is regular audio teleconferencing between centres. In the Northern Territory, some projects underway include an E-mail project at Barkly, the trialling of compressed video in conjunction with Batchelor College, the Remote Area Teacher Education [RATE] Project with Batchelor College, and the trialling of 'Timbuktu Remote' (Apple Computer Communications software) for diagnosis of computer problems by phone (Northern Territory Department of Education, 1990). A satellite video project at Hamilton Education Centre, Victoria, has been wound down and the equipment sold.

The **Country Areas Program** [CAP] has supported development of strategies to provide educational support services to isolated rural students and teachers. Shared specialists, resource centres and mobile classrooms have had a positive impact. However, there are still schools which for reasons of extreme isolation and high freight and travel costs, do not have access to these support services (**Country Areas Program**, 1990). The CAP review therefore recommended additional funding for states with remote schools, and suggested telecommunications as an alternative means of providing support services to these areas.

Educational accountability information of interest to the Commonwealth for both government and non-government schools does include professional development activities, namely:

- the number of staff involved by type, level, gender and specialist area;
- outcomes (e.g. examples of effective professional development activities);
- areas of unmet demand; and
- career planning details.

(DEET. **Commonwealth Programs for Schools**, 1990a).

However, this accountability information has not, as yet, provided quantifiable data on TPD (Dr Fordham, DEET, personal communication, 1991).

Commonwealth funding via the **Projects of National Significance** in Teacher Quality Program is being used for the development of:

- policy for open access to TPD;
- strategies for professional development of science teachers; and
- modules for professional development for mathematics and science, biological technology, Non-English-Speaking-Background [NESB] students and induction of rural and remote teachers.

Another significant national project is being sponsored by the Australian Advisory Council on Languages and Multicultural Education. The objectives of its Distance Education and Languages Project include policy development and the training of teachers and supervisory personnel.

The state, Territory and Commonwealth Ministers for Education convene at the national level through the **Australian Education Council** [AEC]. The AEC has the facility to develop courses for the professional development of teachers for use in all states through the Curriculum Corporation which is jointly owned by all State Ministers (except New South Wales at present). The Corporation replaces the previous Curriculum Development Centre and continues its Australian Schools Curriculum Information Service [ASCIS]. It continues to provide a bibliographic database service for school libraries, and is revising its database on curriculum information.

The new arrangements may be viewed as a strategy for the introduction of a unified system of schooling through collaboration of state education authorities on national curriculum development. The Corporation offers the potential for application to the national provision of TPD especially in terms of a national database of relevant professional development activities. Current policy of the Curriculum Corporation limits its direct involvement in developing professional development materials for teachers to publication of materials such as the Mathematics Curriculum Teaching Program and the Secondary Literacy Inservice Course. Developmental work will not be undertaken 'in house' but contracted out.

The **Hobart Declaration on Schooling** (1989) outlines goals and principles of collaboration which include the intention to develop ***strategies to improve teacher education.*** Working parties have been convened to address teacher education, national curriculum development and national communications. The work of these groups contributes to a co-operative approach to TPD in relation to common curriculum and through developing an integrated communications network for education.

It is important to note that the understanding of collaboration displayed here, while including consultation with teacher professional groups, does so with an emphasis on dissemination and promotion rather than full participation by teachers in the process.

3.2.3.2 State Education Authorities Provision

State systems are major providers of TPD which generally does not qualify for a tertiary award. Most Australian State and Territory education systems are engaged in structural reform. The focus is to improve educational outcomes through management reform and strategic planning. Changes emphasise corporate planning and devolution of responsibility with associated increased accountability and reporting. Administrative and support resources and expertise are being dispersed closer to the identified locus of educational reform, the school.

Progress towards devolution in Australian schools has been summarised as follows in **Australia's Teachers: An Agenda for the Next Decade** (1990) after the National Conference on Development, Planning and Review, in April 1990:

> *The government school systems of Australia represent points on a spectrum of devolution of powers and responsibilities to schools, from reasonably highly devolved, as in Victoria, to only marginally devolved in New South Wales. The picture is changing rapidly however, as most States and Territories are planning or putting in place, mechanisms that will consolidate or increase devolution to schools.* (p.160)

A summary of devolution, district provision, statewide planning and school planning, accountability and reporting for all state systems is provided on pages 160-166 of that document and reproduced in Appendix I.

Corporate planning involves the formulation of statements of priorities, directions and goals at state, regional, district and school levels. NBEET notes, however, that the expected degree of compliance (or the latitude for non-compliance) with higher level objectives is difficult to gauge .

Devolution confers increased responsibilities and powers for managerial functions, decision-making and attainment of formulated objectives upon schools. Hughes (1991) recognises that whilst the strategies encourage local decision-making, central control has been tightened nevertheless through:

> *such initiatives as greater accountability, stronger curriculum specification, tighter requirements for school evaluation, student assessment and reporting* (Hughes, 1991, p.55).

Since that National Conference and NBEET's prediction of rapid change, major reports proposing directions for change in schooling or teacher education have issued from Queensland (**Focus on Schools**, 1990), New South Wales (**Teacher Education Directions and Strategies**, September 1990), Tasmania (**Foundations for the Future**, October 1990) and Western Australia (**Good Teachers Make Good Schools**, November 1990).

In line with an emphasis on human resource management, restructured departments in most states are aggregating personnel functions, industrial relations and staff development as a management unit. Formerly, professional development was located as an adjunct to a range of divisions or directorates such as 'schools', 'curriculum' and 'support services'.

This trend towards increased devolution recognises the school and the individual teacher as the locus of educational reform. Schools will increasingly formulate their own professional development plans and manage their own budgets for this purpose. In Victoria, for example, as previously mentioned, the sum of all regional professional development plans constitutes the state professional development plan.

Systems generally recognise the need to support professional development for educational change (for example, for new curriculum assessment or social justice initiatives). Therefore, Teachers' Centres, Education Centres, Education Resource Centres, Resource Centres, or Support Centres as they are variously named, together with central production services, will continue to perform this role.

Consistent with this philosophy of supporting schools and in order to meet award restructuring requirements in a time of budgetary restraint, the resources and expertise formerly residing within central bureaucracies are being relocated within regions and schools (e.g. New South Wales, Queensland, Victoria, Western Australia). South Australia has operated in this decentralised way for some time.

Funding mechanisms now place more emphasis on a forward planning approach in response to the local and regional context and reduce reliance on targeted grants or a submissions-driven approach. Devolution of funding means schools receive discretionary funds within the overall school budget for the implementation of their professional development plans. Allocations for professional development may include a teacher proportionate allowance as well as loadings for remoteness or special need. Additional funding on a submission basis may also be available. Funding available to schools and regions varies from state to state.

Figures available from the Northern Territory indicate that around 10% of the total inservice budget is allocated to the regions.

In South Australia, areas have received around 70% of the available funds in past years. At the time of preparing this report, allocations for the current fiscal year were in doubt with cut backs a possibility. South Australian areas develop their own plans, and as an example, the Western Area apportioned its share of funds in 1990 in the following manner:

30% direct to schools
25% to Area projects
40% to networks or school clusters
5% to work places.

In New South Wales the majority of funds for 'human resource development' activities are allocated directly to schools (the breakdown in 1991 being 61% to schools, 25% to regions, 14% to central directorates).

Increasingly, professional development services are available on a user-pays basis, although these support services also require independent support.

The professional development provision of the centres is responsive to both systemic needs and those of local schools covering topics which range across first aid, mathematics, leadership, class management, literacy, librarianship, drug and alcohol education, human relations, and many more.

Professional development activities are occurring more often within schools or school clusters using pupil-free days as funds for teacher release and replacement become harder to find. Data on program initiation in 1987-88 indicated around 40% of professional development activities were at that time organised from the school (Logan and others, 1990). School professional development activities may involve the whole staff or small groups working on a broadening array of topics relating to content, teaching processes, student welfare, policy or community decision-making, among others. One teacher may be selected to participate in a course or program and then be responsible for disseminating these ideas and skills through the school.

Program development occurs at several levels within systems. At the school level, a guest speaker or discussion, perhaps centring on some centrally-produced stimulus material may be organised. At regional/area/support centre level a range of programs and services is offered to suit the particular context and priorities. Support centres may offer consultancy services and assist schools organise collegial professional development activities.

At state centres of specialist expertise, broadly applicable programs such as LLIMY (Literacy and Learning in the Middle Years) may be developed. In total these programs constitute a suite of resources available to schools in developing their professional development plans. They may be adapted or supplemented to suit local contexts.

Professional associations in some states (e.g. New South Wales and Victoria) are to receive government support for their professional development activities. This will add to the selection of resources available to schools in planning professional development and acknowledges the significant contribution of these groups.

Centrally initiated professional development activities requiring travel and replacement are being curtailed.

The need for a coordinated approach in order to avoid duplication and to ensure that system priorities receive adequate attention, has been identified in numerous reports and highlighted as a key strategy by the Victorian Ministry of Education Professional Development Working Party. School level professional development planning in Victoria must consider activities offered at state, regional or area level. The function of school professional development coordinators also includes an accountability reporting function and the monitoring of programs.

In New South Wales, the **Human Resource Development Schools Manual** details the policies and outlines procedures whereby schools are able to develop their own programs (within centrally developed guidelines) and to provide statistics for monitoring purposes.

Despite local initiation and organisation of professional development activities, systems directives and mandated requirements for curriculum and assessment nevertheless continue to set the parameters for schools' professional development needs.

3.2.3.3 National Teachers' Associations

Although national organisations of professional associations have not been extensively surveyed for this project, they are believed to contribute to professional development largely through conferences, seminars, journals and newsletters, which are organised at both national and state levels. They are also active in the political processes relevant to professional development, several of them having direct links into unions. Each of over twenty national professional associations serves its own specialist interests and there is no single peak professional body in teaching which is strongly supported.

The **Australian Science Teachers' Association** [ASTA] provides an example of the kind of strategies adopted at the national level by teachers' professional associations (refer to Figure 1).

ASTA provides professional development for teachers through its national conference, CONASTA, and through its journals, newsletters and meetings. It has developed a National Professional Development strategy which involves:

- issuing certification for attendance at the CONASTA conference and seeking employer recognition of this participation by teachers;
- seeking sponsorship from education systems for conference attendance;
- establishing a summer school; and
- disseminating successful state resource materials nationally.

This association may also bid for contract work in developing curriculum materials.

Figure 1. Professional Development Strategies of the Australian Science Teachers' Association.

The **Australian Teachers Union** is not involved in providing professional development except for their own staff. This is left to state affiliates to organise and relates largely to union affairs. Nevertheless the ATU has an important role in negotiating policy and working conditions of teachers. It is also looking at the nexus between industrial and professional matters and expects to increase its concern with TPD.

The **Australian College of Education** is not a major provider of TPD programs and activities as a body, but its individual members may make significant contributions. Research and the dissemination of knowledge are important functions of the ACE.

National Parent and Citizens' Organisations do not provide formal TPD, but at the local level these groups may assist in the induction and socialisation of teachers. These groups are active in policy development and political lobbying and appear dedicated and well organised with regard to promoting quality in teaching and learning. The **Isolated Children's Parents' Association** is particularly noted in regard to education in rural areas.

3.2.3.4 Other Groups' Provision

Of the educational research and support organisations identified at national level, only the **Curriculum Corporation** makes a direct input to TPD resources in the school sector. **NBEET** focuses on policy development and advice to the government, while the **Australian Council for Educational Research** [ACER], the **TAFE National Centre for Research and Development** and the **Rural Education Research and Development Centre** contribute primarily through research and the dissemination of current understandings.

Few providers organise TPD on a national basis. Only the Seventh Day Adventist [SDA] and Lutheran Churches are known to this Project to be organised this way, although this may also be the case in other religious systems from whom no response was obtained. A more unified national direction for schooling and teacher education in non-government as well as government schools is a current initiative of the Commonwealth Government through the AEC and Resource Agreements.

The organisational structure of both the National Catholic Education Commission and the National Council of Independent Schools of Australia is such that they carry no direct responsibility for either provision or policy for TPD. These functions are organised at the state or diocese level. Catholic education is largely decentralised and organised along diocesan lines. Independent schools are autonomous and loosely organised at state level with considerable individual school autonomy in most cases.

The **Seventh Day Adventist Church** offers a wide range of TPD opportunities which are coordinated nationally. Its education courses available through Avondale College lead to the Bachelor of Education degree with provision for higher awards through overseas universities. The Church also provides study assistance and sponsors professional association membership. The National Curriculum Unit of the SDA Church supports the work of teachers by providing professional development facilities and opportunities. Practising teachers participate in cluster groups for curriculum development and the trialling of new programs.

The **Lutheran Teachers' College** currently offers only internal awards, but is seeking Graduate Diploma accreditation of its courses which are two-thirds theological. It also provides custom designed, local needs courses on topics such as counselling.

Both churches offer a distance education mode of study; the Lutheran Church using print media and visiting lecturers, the SDA Home Study International program employing print and also audio and video tapes produced in the USA for international use.

In **non-government schools**, professional development provision is a matter for each school and teacher. These schools are accustomed to the user-pays principle but are concerned that access to inter-system professional development activities remains open. The associations of independent schools are in some states cooperating for the provision of professional development. For example, in Queensland the AISQ is building its own conference facility.

Within the **Catholic Education system**, a rànge of programs may be offered centrally (as in New South Wales) in support of teaching, administrative, management, pastoral care and spiritual objectives. However, the regional or diocesan offices, religious orders or schools are the principal providers. Cross-state cooperation is evident, as well, and Western Australia, for example, uses the religious education TPD developed in New South Wales.

3.2.3.5 Commercial Providers

Australia is beginning to see the growth of private companies providing educational services for teachers and industry generally. The John Gardiner Centre in Victoria is one such example. Computer companies are entering the field.

It should be noted that the Curriculum Corporation owned by the Ministries of Education is also a commercial enterprise. Higher education institutions are increasingly offering courses on a cost recovery or profit basis. Such commercialisation of educational services is strong in America.

Competition amongst TPD providers on a commercial basis has the potential to stimulate increased and improved resources for teachers through market pressures, but it also introduces the issue of quality control.

3.2.4 Participation

Pertinent data on teachers' participation in professional development are available from the ACE study **Teachers in Australian Schools: A 1989 Profile** by Logan and others, (1990).

The study revealed that around one-eighth of teachers undertake award-bearing studies each year while some 41% participated in six or more days of non-award activities over the two years of the study, 1987-88. Only around 17% had participated in ten days' professional development, the standard recommended in both **Teacher Quality: An Issues Paper** (NBEET, 1989) and **Teacher Education in Australia** (AEC, 1990). For a third of these teachers, participation occurred primarily out of school hours and it was noted that classroom teachers (secondary less so than primary) appeared to be disadvantaged in comparison to administration and support staff in both attendance rates and in obtaining release from normal duties to attend professional development activities in school time. Presumably, this reflects the necessity for alternative class supervision or flexibility within schools for creative internal arrangements to provide teachers with some time for professional development.

Data from the ACE study document the significant contribution made by teachers towards their own professional development, and points to inequities in its provision. It also reveals the importance of the school in initiating professional development activities and as the site for these activities.

3.2.5 Issues for the Management of Open Access Professional Development

During the initial survey work of the Project, management or organisational issues of significance were identified. Such issues predominated over technological and courseware issues possibly, in part, because of the limited focus on distance modes for professional development to date. Most issues would seem to be applicable across state boundaries indicating a commonality of needs.

The fundamental issues of funding, resourcing, coordination, access, equity and control have implications for all aspects of TPD. Such policy or management issues have been flagged previously in many reports [e.g. **Quality of Education in Australia** (1985); **Teachers Learning** (1988); **Discipline Review of Mathematics and Science** (1989); **Teacher Quality** (1989); **Teacher Education in Australia** (1990)]. The following critical statement from the Schools Council succinctly summarises the views of the last three:

> *The three reports are quite consistent on this issue. All argue that greater inservice provision is essential if the quality of the teaching force is to be maintained and strengthened and if the benefits of award restructuring are to be realised. They are also consistent in their assessment of past provision....as being fragmented, poorly funded, largely uncredentialled and undervalued.* (**The Shape of Teacher Education: Some Proposals**, 1990, p.13)

For participation in TPD to be increased, continuing reform of current systems of valuing and recognising such effort needs to occur. The overall value in which TPD is held is reflected in the levels of funding, resourcing and time committed to the enterprise as well as its role in teaching awards and teachers' career structures. The report to the Project on Queensland identified three main purposes of professional development:

(i) implementation of government social, cultural and economic policies;
(ii) implementation of policies and practices, sponsored by employing authorities at all levels; and
(iii) the professional development of individual teachers.

The relative value placed on each purpose is also evident in the system of incentives, rewards and recognition attending each, which are topics still at issue in state and national industrial and academic forums. The comparative values placed on these three purposes will also influence future decisions on all fundamental issues. Professional development for all three purposes needs to be recognised and enabled.

Some of the major specific issues will be explored in the following sections. While not unique to an open access approach, they are nevertheless, essential to its success. Instances where an accommodation has been reached on an issue offer models of potential solutions in other states and in national policy.

3.2.5.1 Funding

Governments remain the principal providers of finance for TPD, although teachers also contribute their time, tertiary fees and membership fees for professional associations in many instances. Teachers also fund personal professional development not specifically related to systems priorities, but to improve their competence. Teacher education must compete for funding against other government priorities and within higher education institutions. In the past, TPD has suffered reduced prioritisation in times of fiscal restraint.

46

The Commonwealth Professional Development Program, in some cases, served as an alternative to state or system provision (Coulter and Ingvarson, 1985) and since the program ceased, state authorities have also reduced their commitment to professional development.

The Training Guarantee currently specifies a minimum level of expenditure on professional development which is believed to be below current commitments of most systems. There are no guarantees, however, that teachers, especially classroom teachers, will receive an equitable proportion of that industry commitment to staff training. Furthermore, it should also be noted that some eight years ago a commitment of 1% of recurrent salaries to professional development was not considered to reflect a high priority and in the interim pressures necessitating increased professional development have continued to mount (Docker, Fisher and Hughes, 1983).

Standardisation of the commitment to TPD carries the danger of reducing provision to the lowest common denominator. Prescriptions in terms of funding (as a set percentage) or time (as a specified number of days) will not guarantee equity of provision across diverse situations where travel time and costs vary, and where costs for communications facilities installation are higher in rural areas. An additional inequity stems from variations in school size, since 1% of salary in small independent schools may not generate a sufficient 'critical mass' of funding to service economically their TPD needs, and in addition very small schools may be below the $200,000 salary level stipulated for training requirements in the Act. Differential funding mechanisms must continue and be reviewed if equity of provision is the aim.

The Schools Council, cited above, also believes that the Commonwealth should be asked to make a commitment to TPD.

3.2.5.2 Access

Despite the rhetoric and good intentions of the past, equity of access remains a most significant issue relating to professional development provision.

The issue of access has many dimensions. It must be considered across systems and sectors, as well as within systems, regions and schools throughout Australia and, perhaps, internationally. It has political, social, cultural, industrial relations, administrative and technological aspects. Access to professional development is currently hampered mainly by travel costs and time requirements together with the availability of, and funding for, teacher replacement. In rural schools, especially, access is heavily dependent on funding and available replacement staff.

Attention has already been drawn to inequity of access related to position in school, in that classroom teachers receive less release time than administrative personnel. This is due to such factors as commitment to a class group and inflexible use of time.

A further limitation may arise from lack of familiarity with the delivery mode. Awareness of the available options, course prerequisites, location, timing, quotas, course design, monetary and personal cost, as well as personal disposition and circumstances may all influence participation.

Professional support staff in schools currently also receive limited attention for professional development, as do unemployed and part-time teachers or those re-entering the workforce. The needs of special groups such as Aboriginal community teachers also require specific consideration.

Problems of access can be addressed to a considerable extent through an open access approach which may be particularly cost-effective in catering for the needs of rural teachers when compared with travel, accommodation and replacement costs to achieve the same ends. While it has been stated that travel and face-to-face meetings have therapeutic value, trials with telecommunications for isolated nurses in the Queensland Telemedicine Project found the need for such 'therapy' to be greatly reduced (Watson, 1988).

Simply installing the technology in schools, however, will not guarantee access. Attitudes to technology as well as unfamiliarity may limit access. The Project was informed that, in some instances electronic mail facilities reportedly lie idle while consultants continue to drive thousands of kilometres each year. Adequate support and training in the use of telecommunications will be vital as will provision for the maintenance and servicing of equipment.

Preservice training in distance communications for all teachers would be advisable not only as preparation for country service, but also due to the increasing use of these technologies in urban areas.

3.2.5.3 Coordination of Professional Development

Research reports calling for a coordinated, planned, structured approach to TPD have been numerous and consistent throughout the eighties. Greater involvement of HEIs in non-award activities has also been recommended.

Some recent developments encourage a climate of joint venturing, resource sharing and coordination. Resource Agreements have increased the incentives for this kind of collaboration while the national curriculum demonstrates a coordinated approach. Without such incentives, cooperation is unlikely as each system or sector relies on its own separate funds.

Models for a collaborative approach which also include teachers exist at state and regional levels in the **consortia for professional development** in Tasmania, Western Australia and Queensland (proposed) and in regional joint ventures such as those at Northern Rivers and Central Queensland. These will be elaborated in greater detail as each has a somewhat different perspective.

The Tasmanian Centre for the Continuing Education of Teachers [CCET], established in 1972 is the longest standing consortium. It is staffed and funded by the Tasmanian Department of Education and the Arts and utilises the resources of the Department, the University of Tasmania [UTAS] and the previously named Tasmanian State Institute of Technology, which in 1991 amalgamated with UTAS. The Board of Management comprises representatives of these organisations and also teacher unions, independent schools, and professional bodies. Catholic education appears not to be specifically represented. CCET offers a selection of courses for teachers in government and non-government schools and nurse educators. Subjects are developed, accredited and supervised cooperatively by the institutions involved and may be used towards formal awards, for Departmental classification or personal professional development. The distance mode of delivery is not being used. The Cresap Report (1990) has recommended staff reductions for CCET.

The Centre for Advanced Teaching Studies in Tasmania [CATS], is closely related to CCET but under a separate management group. Five study groups within CATS support systematic enquiry into classroom practice in areas of teaching and learning, children and learning, parents and community, youth education studies and school effectiveness. The report commissioned from Cresap originally advised the abolition of CATS but this has been revised to a policy of integration with CCET. These reductions and changes indicate that even though various interest groups participate in a consortium, the real power may well be vested in the funding agency.

The Schools' Professional Development Consortium in Western Australia began operation in 1991. The board of management comprises the three Universities (Murdoch, Curtin and Edith Cowan), the Ministry of Education, Catholic Education, the Association of Independent Schools and the unions. A council to support the board of management includes teacher associations as well as the organisations already named. Funding has been arranged for the first twelve months with contributions from DEET, Edith Cowan University and major employers.

The consortium will offer a full range of services from acting in a brokerage role between parties (for which no fee is charged) to the development and delivery of courses. The Ministry has contracted the consortium to develop a management course for principals.

In supporting the consortium the Ministry of Education was keen to establish a network of experts in the field able to contribute in specific areas. A network of serving teachers and other personnel with particular expertise was envisaged. The consortium will also play a broker's role in establishing contracts, monitoring quality, paying fees etc., and will canvass the need for courses.

A directory of information will be published in 1991 and there are plans to establish a database of TPD. Mechanisms are still fluid and evolving.

In Queensland a professional development consortium is proposed to act as a forum for collaboration and discussion, a facilitator in negotiations on accreditation and credit transfer and a clearinghouse for information. There are plans to establish a database of courses and programs and the need for quality criteria for entries is acknowledged in this regard. In contrast to Western Australia, the focus is on programs rather than personnel.

The consortium proposal is generally supported in principle although some professional associations would prefer that the money be spent on 'doing inservice' rather than establishing organisational structures.

Funding is the crucial issue for the establishment of the Queensland consortium. Teachers unions appear likely to reject the proposal of a $1.00 per teacher fee to be added to their registration to support the consortium. The Department of Education has made no commitment, but appears willing to contribute its computer facilities and network. The Board of Teacher Registration and the Association of Independent Schools appear willing to commit facilities.

The Centre for Professional Development, Northern NSW is a partnership between the North Coast Region of the NSW Department of School Education and the University of New England, Northern Rivers. It was established in 1988 with the aim to improve the quality of learning within schools of the North Coast Region by assisting the individual professional development of all school staff. What makes the Centre innovative in Australia is that the activities offered to teachers can be accredited towards awards and degrees of the University of New England, Northern Rivers. Teachers can upgrade their academic qualifications while enhancing their knowledge and skills in an area they see as relevant to their classroom practice. The Centre provides needs-based, practical professional development opportunities.

In South Australia, early in 1990, a meeting of representatives of the South Australian Education Department, Catholic Education, SACAE, the University of Adelaide and Flinders University was convened to discuss a consortium for teacher education. The idea received approval in principle but has not been acted upon. The recent climate of amalgamations and cost cutting has not been conducive to further progress, although the idea is still 'floating'.

Consortia focussing on curriculum delivery (e.g. the Australian Science Distance Education Consortium [ASCIDEC], and the South Australian Mathematics Consortium) and consortia formed in order to achieve joint DEC status [WADEC] have also been organised. These may well offer courses of value to teachers but do not specialise in TPD.

Currently the individual partners of ASCIDEC offer degrees and diplomas in separate science strands but eventually cross-crediting arrangements will allow electives to be selected across the partners. Course materials will include video and computerised learning packages plus equipment kits. Fax and electronic mail can be used for course delivery, assignment return and communication with tutors. Some residential work is required.

Each professional development consortium has a distinctly in-state focus, and it is too early in the development of this trend for any formal inter-consortium links to have been established. What is needed is a national consortium or a federation of state consortia. There would be considerable merit in a national project to seed or spark such a level of cooperation.

Maximum consumer and political power to negotiate bulk customer rates and lobby politically for a favourable educational and communications environment will only be attained by a consortium or agency for the whole of education, not merely for TPD or representing only the employers. In **The Shape of**

Teacher Education: Some Proposals, NBEET (1990) has proposed that it develop draft charters for committees to collaborate on teacher education at various levels. Such a move would require extensive consultation with all stakeholders and could be based on the evolving consortia.

3.2.5.4 Control

Significant concern was apparent about the potential of an open access approach to be used as a mechanism for regulating teachers' work rather than for facilitating the development of a 'learning culture' among teachers and the development of competent, critical professionals. Systems, on the other hand, were concerned that sufficient attention be paid to systems' needs and government priorities. The alternative perspectives need not necessarily be mutually exclusive but finding an appropriate balance or means of integrating the two will likely remain a source of ongoing tension. In controlling curriculum, assessment and administration, state systems wield powerful levers over the nature of teachers' work and the educational enterprise. However, unless teachers embrace the philosophy and directions of reform, little real change may be achieved. Collaboration needs to incorporate practitioners for any meaningful resolution of these tensions. The development of critical, competent classroom practitioners still remains the task of the profession.

3.2.5.5 Recognition for Professional Development

Recognition for professional development involves many issues relating to two overlapping areas. The first concerns teachers' award restructuring and relates to teaching credentials, salaries, salary progression, promotion and appraisal; the second involves academic issues and the integration of teachers' work with academic awards.

Standardisation of teacher credentialling requirements, national registration and portability of status are on the national agenda (Dawkins, 1990a) as strategies for building a versatile teaching workforce capable of working in any location across the nation. While there is obvious merit in these goals and in the removal of unnecessary differences, the philosophy of centralisation and standardisation appears to under-estimate the extent of existing informal cross-recognition of credentials and to assume that standard prescriptions would be appropriate in all contexts across the nation. In a sense the National Policy for Aboriginal and Torres Strait Islander teachers which sets alternative requirements for one distinct context, exemplifies and acknowledges the value of diversity. The issue becomes: How much difference is necessary or which differences are unnecessary?

Promotional incentives for professional development are being addressed in separate state teaching awards. The criteria for selection of Advanced (or Master) Skills Teachers and the mechanisms adopted for appraisal are important issues here. Again an acceptable balance needs to be struck in rewarding professional development for different purposes. The scheme proposed by the Schools Council in **Australia's Teachers** (1990) linking requirements, entitlements and options for professional development to **career planning** offers a framework for recognising and/or rewarding professional development activities for all three of the major purposes previously mentioned.

Another concern is that an appraisal mechanism such as competency testing, which is easiest from an administrative point of view but not necessarily the most beneficial or educationally sound, will be instituted.

With regard to academic issues, credit transfer and the role of the HEIs in non-award activities are important issues. Gaining accreditation of non-award courses and experiential learning without the lowering of academic standards are also prominent issues.

Many of the issues concerning the provision of adequate incentives and recognition for professional development are already being addressed through award negotiation, the National Project on the Quality of Teaching and Learning, consortia for TPD and the proposed Credit Transfer Authority of Australia. Developments such as these provide a foundation for ongoing change as precedents are established. Figure 2 lists some of these incentives for TPD more fully.

- Award restructuring provides incentives for upgrading to four-year-trained status and in Queensland the award allows equivalence between 150 hours of (out of school hours) participation and four-year-trained status. However, no credit towards upgrading is given for working hours activities.
- AST/MST positions criteria may include professional development.
- Credit is already granted at some HEIs for some non-award courses (FLIP, ELIC), and employing authorities are negotiating credit for more of their semester-long courses (e.g. in New South Wales).
- The Commonwealth is actively promoting the formalisation of credit transfer arrangements and has agreed to fund a pilot credit transfer project with the intention that it would lead to the establishment of a Credit Transfer Authority. The ACCV has also agreed to support this project.
- The Quality of Teaching and Learning Project is expected to contribute by developing national standards linking professional development to teachers' career structure.

Figure 2: Foundations for improved valuation or recognition of teachers' professional development

While applauding these efforts for increased and more flexible recognition of TPD, this Project would call attention to the possible adverse effects of establishing an 'accreditation culture' in which duties are only undertaken for their credit or promotional value rather than for altruistic reasons, personal satisfaction or their intrinsic worth.

It should also be noted that while the functions of a 'Credit Transfer Authority' are likely to exert pressure for increased credit transfer and recognition of experiential learning, it could merely centralise and standardise procedures for credit transfer, essentially rationalising such effort and formalising procedures, rather than facilitating open learning. Without such an Authority having the power to grant degrees in its own right, students are still likely to encounter difficulties in tailoring courses to their precise needs.

3.2.6 Implications for the Management of Open Access

It is logical that the management of TPD be organised through existing structures. Two alternatives are apparent: open access TPD could be linked either to existing professional development services or to school level distance education units. As the latter are primarily curriculum delivery and support services for students and home tutors, and restricted in distribution, the former would be the more likely choice. These structures for professional development throughout the states in the government sector are managed through three-or four-tier structures with associated support centres serving groups of schools and some centralised special services.

In rural areas especially, networks or clusters of schools have also been established which already utilise telecommunications links. This organisational concept could be readily developed and extended to build a national educational network.

It is evident from the descriptions in this section that interest in TPD in identified priority areas is strong, as is interest in extending the use of telecommunications to school curriculum delivery and tertiary access.

Current provision for TPD may appear from the overview to be fairly comprehensive and indeed much is being done. However, average participation rates of three professional development days per teacher in non-award activities and of around 12% of teachers in tertiary studies a year (Logan and others, 1990) are not high when the scale of the present ongoing changes is considered. In coping with these required changes, teachers must be relying primarily on informal and ongoing personal or small group efforts on a day-to-day basis as a part of everyday duties.

Adequate commitments of funding and resources for TPD are essential. The Australian Teachers Union and others regret the reduced commitment to professional development associated firstly with the activities of the 'Razor Gang' of 1980-81 in closing the Curriculum Development Centre and in reducing funding for Commonwealth Education Centres and later in the closure of the Professional Development Program. There is no evidence that alternative mechanisms have fully compensated for this loss of support in a period of increasing necessity.

The implications of all these issues also include the need for an open access approach to evolve from current provision towards an acceptance into the working lives of Australian teachers. Professional development through telecommunications will need to be integrated into everyday practices within schools. Distance courses can be added to the selection of programs already available to support teachers but will need to focus on enhancing in-school activities and supporting collegial professional development in the context of school improvement.

The potential benefits of an open access approach lie as much in its networking capabilities as its ability to deliver prepared programs. Encouragement and support for this aspect of telecommunications use must be provided. Furthermore, adequate training and support mechanisms will be vital if teachers are to adopt the new methods in addition to the many other demands upon their time.

Accompanying schools' and centres' increased control over funds for professional development has been an increased application of the 'user-pays' principle evidenced in charges against school budgets, HECS and fee-paying courses. Likely consequences may well include an increase in the privatisation of TPD services with implications for control of quality and accreditation of such courses, together with greater demands for accountability from the customers of educational services.

Possibilities exist for schools to exploit through contractual arrangements a wide variety of expertise such as that which resides in HEIs, CSIRO, computer firms, industry and elsewhere, including other schools and systems.

In addition to the developments of policy, provision and management of TPD, there has also been significant growth in the provision and use of communications technology in education. This is outlined in the following section.

3.3 Communications Technology and Education

Since the early 1980s there has been considerable interest in the application of communications technology in Australian education. This interest was given an additional fillip by the launch of the AUSSAT satellites in 1985-86. At the same time, microcomputers were being introduced into schooling at a rapid rate, some electronic mail systems (e.g. Tasnet) and facsimile machines were starting to be used, audio teleconferencing was being developed (especially in South Australia and Queensland), and videoconferencing was being talked about.

In those early 1980s, also, the Commonwealth Department of Education sponsored a variety of trials through its Australian Committee on the Educational Use of Telecommunications [ACEUT].

The AEC has also demonstrated a long-standing concern over this topic and in 1983 established a Task Force on Education and Technology which reported its findings in 1985 in **Education and Technology.** Subsequently, this Task Force became the Education Technology Conference which deliberated until 1989.

In 1988, further government interest in this area was displayed through the House of Representatives Standing Committee on Employment, Education and Training ['Brumby Committee'] which conducted an inquiry into the potential of new technology, particularly satellite technology to improve educational access and outcomes in Australia. Its report, **An Apple for the Teacher? Choice and Technology in Learning** (1989) dealt thoroughly with the concepts and issues relating to this topic. Its recommendations were, for the most part, directed at the AEC.

A new stimulus within the AEC in 1989 resulted in the establishment of a Working Party on the Collaboration of States in the Use of Satellite for Distance Education. The report of this Working Party, **Creating a National Communications Framework for Educational Delivery,** was tabled at the AEC Meeting of 15-16 April 1991. Its only recommendation, i.e. to set up another national working party, was adopted, with representation to include school, TAFE and higher education as well as industry sectors.

The terms of reference of this new Working Party are far-reaching, including all aspects of telecommunications systems and standards, as well as the stimulation and coordination of applications for sharing resources and expertise across the shared curriculum elements, industry training and tertiary programs.

This Project, therefore, stops short of making detailed suggestions about a national communications policy or networks for education and training, and believes this task is better dealt with by the AEC Working Party.

It is important to note that TPD is only **one** of many areas of application for a national communications infrastructure.

3.3.1 Telecommunications Policy

Telecommunications policy can have a significant impact on open access systems for education and training. The implications have been set out in the United States Office of Technology Assessment [OTA)] Report as follows:

> *Telecommunications policies can be barriers to implementation or they can expedite development. They require immediate attention at the national level. In a deregulated telecommunications market place, education may be at a disadvantage. However, education could prove to be a significant market, as shown by the variety and number of service providers entering the field. For the promise of distance learning to be realised, the education community must make its requirements and needs known to the telecommunications policy makers, and policy makers must ensure that these needs are considered. Telecommunications policies affects costs, capacity, and types of services available to distance education. Yet the federal policy issues in this arena have not been reviewed in light of this fast-growing phenomenon ('OTA Report on Distance Learning'*, **Ed**, 4:3, p.5).

The Commonwealth government is currently reviewing telecommunications policy. The implications of this review for education were dealt with in the report of the 1990-91 AEC Working Party mentioned above.

Essentially, telecommunications is entering a semi-deregulated phase. The new federal government act being drafted at present will provide for a second carrier with access to both domestic and international markets. The two major carriers will then be:

(i) a new company formed by the merger of Telecom Australia and OTC [Australian Overseas Telecommunications Commission]; and
(ii) another based on the sale of AUSSAT, Australia's domestic satellite agency.

A regulatory body, **AUSTEL** has also been established by the federal government as an independent regulator. Its functions extend across all matters relating to interconnectivity, tariffing and technical approval. AUSTEL in collaboration with the federal Department of Primary Industries and Energy is in the process (late 1991) of commissioning a project to assess the adequacy of telecommunications in rural Australia.

Deregulation under the new act will result in substantial separation of 'reserve' carrier services and those open to wider competition. Since teleconferencing is regarded as a value added service, it will therefore be open to free competition.

Government-owned communications systems are permitted to resell capacity on their networks. However, rather than utilising this idle capacity for the advantage of education and training, it is possible that 'cost recovery' and 'commercial rates' policies will prevail for all users.

Rates for teleconferencing through traditional channels and a new, expanded transmission capacity called Integrated Services Digital Network [ISDN], are predicted to fall as competition increases through the introduction of a second carrier.

Prior to the new telecommunications policy taking effect, there have been three major carriers, Telecom, OTC and AUSSAT, offering a comprehensive range of services on which networks may be built [Figure 3].

Telecom Telecom Australia provides satellite and terrestrial networks and services for all forms of teleconferencing:

- **Keylink** is the electronic mail service.
- **ConferLink** is the audio teleconferencing service.
- **ISDN** can be used to provide videoconferencing and all other forms of communications.

OTC The Overseas Telecommunications Commission [OTC] provides all forms of teleconferencing services as well, but specialises in overseas links:

- **OTC Dialcom** is the electronic mail service with international connections and is used, for example, by the Computer Pals groups. It has a computer-text conferencing software service called 'Tradepost'.

- **Videoconferencing** is now possible with over 10 countries via satellite.

AUSSAT Australia's domestic satellite service, AUSSAT, is soon to become part of a second, privately-owned carrier. Its services include all forms of voice, data and broadcast services based on private networks. In 1991 a full range of Public Switched services is expected to be introduced. A Major City Earth Station in each capital city provides video (and other) uplinks at present.

Figure 3: Telecommunications Carriers and Their Services

3.3.2 Communication Systems and Provisions in Schools

Although it was not specified in the brief of this Project to compile a directory of all of the communications technology systems in Australia nor to map the facilities existing in schools at present, the state reports and general knowledge within the Project Team have enabled a listing of the major systems. This is provided in Appendix G.

The general observation is that governmental, private/commercial, TAFE, university and schools systems involving all forms of teleconferencing are evolving rapidly. In the TAFE and university sectors, for example, almost $10 million of federal government funds have been spent on video conferencing during the three years 1989-91. About half the schools have some form of facsimile, electronic mail and audio teleconferencing access, and these facilities are being acquired by other schools rapidly.

It is of some concern, however, that the various sectors of education and the state authorities are tending to set up their own systems without considering the future potential for interconnectivity nationally. It is, therefore, a welcome move by the AEC to establish a national Working Party to bring these diverse developments together.

3.3.3 Educational Applications of Telecommunications for TPD.

During the past ten years or more, there have been a large number of projects which have applied communications technology for curriculum delivery, management and various educational services. Those seeking to extend access for TPD have been mostly trials or pilot projects.

Some notable examples which may act as models for further development are described in Appendix I. It is appreciated that many other admirable cases are available, but those described in this Report should suffice to illustrate the range of possibilities and the potential of open access options. They also indicate the scope of the growing reservoir of expertise throughout Australia.

Networking initiatives such as Remote and Isolated Schools Teleconferencing Sched [RISTS] and Computer Pals suggest ways of disseminating local ideas for curriculum enrichment and problem solving through audio and computer text conferencing. They also demonstrate means of addressing professional isolation. On the other hand, the potential to make use of distant expertise and broaden classroom experiences has been realised in the South Australian teleconferencing initiatives in which students could converse with a wide variety of people in industry and the community, thus extending their understandings of career opportunities and the relevance and interest of classroom activities. This concept operates internationally in the UNE Northern Rivers Japanese program with a video conference link via ISDN.

The acceptance and usefulness of advanced telecommunications in Aboriginal and Torres Strait Islander communities is apparent in the Tanami videoconferencing trials and the RATEP project.

Projects such as the Victorian Telematics Project, Queensland's Tele-Learning and Educational Television in Western Australia are responses to the problems of providing adequate curriculum choices and resources in rural areas in order to improve access and participation.

While many of these projects necessarily include TPD, the ELIC telecourse clearly demonstrates the effective use of telecommunications for this specific purpose. The need for careful attention to course design for integration into local activities and the need for further research are clearly shown when the success of this program is compared with the Queensland Inservice Series which received only a limited response from teachers and principals.

3.3.4 Issues in Telecommunications

Despite many successful projects, the general attitude towards the use of telecommunications for TPD seems to be cautious and sceptical. Particular issues in this regard are elaborated in the following sections.

3.3.4.1 Availability and Access

Telecommunications policies at both state and national levels have a major influence on the general access, availability, types of services and affordability of a national communications infrastructure for open access in education. Allocation of satellite transponders, of MDS frequencies, as well as licensing regulations and pricing do not at present give any special consideration to the needs of education and training, which are treated in the same way as all other clients. A more favourable environment for education and training is possible through application for limited licences and/or the negotiation of bulk concessional rates from providers.

Another option is for education to take advantage of downtime on the leased lines of state government public service networks, as is the case in the Canadian provinces of British Columbia and Alberta. It should be possible for these to be used for educational purposes at little or no cost 'after hours' when capacity is under-utilised.

It will be critical for educational use of telecommunications that the AEC Working Party influence the shape of policies currently being developed in the national review of telecommunications.

3.3.4.2 Costs

The matter of costs and who pays these is of concern to many people as a factor limiting access. Costs relate to two areas:

(i) the capital costs of transmission, reception (terminal) equipment and networking infrastructures; and
(ii) the recurrent costs of using the systems.

The capital costs usually discriminate against rural and remote communities both in terms of installation (e.g., installation of a telephone line in a remote area can cost $1440 compared to $250 in an urban area) and transportation of equipment. Many non-government schools also have difficulty in acquiring equipment because of budget constraints. It is advantageous that the costs of these items be shared by schools and systems, as is the case now, but also that an overall systematic approach to provision be adopted.

Recurrent communication costs are also of two kinds:

(i) those subscription and line charges incurred by the user dialling into a network; that is, initiating a connection; and
(ii) the transmission/broadcast of programs and information from a production site.

For computer-text conferencing (and email), audio and audiographic teleconferencing this usually means dialling into the telephone network. Options exist for charges to be centralised and therefore carried by the system or decentralised and carried by the school or the individual user. This same method of subscription can apply to satellite video, since the signal's reception can be switched on selectively after payment of the required fee. As numbers of participants increase, the per-person fee drops since the transmission costs do not vary with the number of receiving sites.

Devolution of funding to schools suggests a subscription basis system would be appropriate. It is important, however, for systems and schools to have some flexibility in the movement of monies between categories so that advantage can be taken of cost-substitution; that is, substituting the cost of long-distance communications technology for travel and accommodation costs. The general trend is for the cost of long distance communications to drop further while the costs for local connections will increase. The perception that communications technology is a costly option is rapidly disappearing, especially when compared to existing face-to-face methods. A rather dramatic example in this regard is the nation wide meeting of an estimated 100,000 teachers of the Australian Teachers' Federation in February 1990 using Skychannel satellite video which cost around $31,000. This is less than the cost of a postage stamp for a letter to each participant.

3.3.4.3 Resources

The need for more **effective deployment of resources** was also apparent in comments in the State reports. In rural communities especially, a growing number of educational 'centres' are being established so that it is possible for one community to have several centres (study centre, education centre, open learning centre, satellite receiving site, etc.) all with similar missions, while other communities have none. A policy and mechanism should exist for sharing and pooling of resources through the co-location of facilities and services.

3.3.4.4 User Concerns

It is commonly believed that it is not possible to substitute effectively for face-to-face teaching and learning, but there is growing evidence in Australia and overseas showing that the use of communications technology can be at least as effective as face-to-face methods for a variety of purposes (e.g. see **Linking for Learning** and examples provided in Appendix H).

Another issue, then, evident from the above, is the **training** of all participants. Because technology enables a new set of delivery options, specialists, usually referred to as 'instructional designers', require new understandings in order to fully exploit the expanding options most effectively. Similarly, there are skills which all users need to learn to ensure successful use of the technology. The University of South Australia and Deakin University jointly offer two postgraduate awards in Distance Education through distance modes and include an optional unit on technology in education. The University of Technology, Sydney also provides such courses. However, despite initiatives such as these, opportunities in this area need to be increased for both pre-service and employed teachers.

Insufficient attention to these skills appears in teacher pre-service courses and few non-award seminars and workshops are available. Teachers are not likely to embrace the potential of these new systems if they are unaware of the options or if they resist change.

3.3.4.5 Network Matters

While everyone seems to agree that **collaboration for rationalisation** across systems and sectors is a good idea, in principle, there are all kinds of reasons why it doesn't work in practice. The growing climate of competition among educational institutions and the profit motive are now tending to drive the mission of educational establishments rather than service to the community. It is evident, however, that no single institution or sector of education can afford to 'go it alone' with regard to installing a communications infrastructure. A joint effort through the pooling of resources is appropriate at the present time. Governments can, and are, encouraging this kind of collaboration through conditions or priorities for funding. This is preferable to providing grants to individual applicants who may then decide on systems which are unlikely to be compatible.

Compatibility and **obsolescence** were additional concerns of contributors to the Project. Obsolescence is a fact of modern times. It can only be dealt with through budgeting for on-going maintenance and renewal of the system. In Victoria, equipment pools maximise the utilisation of these resources. The matter of compatibility in most cases is becoming less of a problem as equipment is increasingly made to interconnect, and international standards are developed and adopted. The most viable national systems are those which do not rely on a specific type of terminal equipment. Examples are electronic mail, satellite video and audio teleconferencing systems.

Another aspect of this issue is the chance of adopting 'dead end' technology. There are some single-function audiographic devices which may be in this category. The general rule is to purchase multipurpose, versatile equipment which can become part of a migration path as new developments emerge. This has been referred to as 'future proofing'. Most, if not all forms of interactive communications are converging onto the microcomputer; so a useful basis for consideration is audiographics which can then grow into videoconferencing.

The quality and availability of a sufficient number of telephone lines are still problematical in some areas of Australia. It is therefore difficult for a system to be based wholly on real time multipoint audio or computer-text conferencing. The broadcast of data via satellite is an important option to overcome some of the difficulties encountered by the terrestrial system.

Another network concern is the proposal to use public broadcasting television and radio services (either ABC or commercial) for education and training. Although on the face of it this appears to be a fruitful avenue to pursue there are three basic problems which were identified from trials in the United States over the past ten years:

(i) broadcasting networks have their own priorities and these will always override the needs of any educational group;
(ii) broadcasting standards require a quality of production beyond the capacity or budgets of educational groups; and
(iii) broadcasting networks are reluctant to allow or provide for real time interactive options ('teleconferencing').

These issues all need to be addressed by the AEC if there is to be a national communications infrastructure developed for education and training.

An additional matter of some concern is the present lack of educational material to enable the remote commercial satellite services to fulfil their licence requirement of 278 hours of educational programming in 1990-91, and double this in 1991-92. In Queensland, the Education Department is producing 90 minutes per week for QSTV - which is far short of the total requirement. It is understood that the RCTS licensees are now applying to have this requirement for educational time abolished. This is indicative of the need for funds to support the design/development/production of courseware as well as to establish communications infrastructures.

3.3.5 Research Needs

With the rapid developments of open access and the proliferation of communications technology there is good reason why several educators are expressing caution and concern that very little evaluative or research information is available. This report makes specific recommendations on priority areas for research in Section 5.

3.4 Summary

This section has indicated the growing resources and considerable experimentation in the educational applications of technology. Very little of this work, however, has been specifically directed to the professional development of teachers.

Concern has been expressed about the cost, appropriateness and accessibility of provisions based on advanced technologies, and there is little doubt that much more experimental work needs to be done and more experience gained before it could be claimed that their use would be widely accepted for TPD. This does not, however, detract from the benefits to be gained and should not deter such developmental work.

At present the role of telecommunications and other technologies, although essential in some areas, is seen as complementary to existing methods. As communications facilities become more widespread access will remain limited unless continuing support and training in their use is available. The costs involved in developing high quality distance education materials, irrespective of their means of delivery, can be very high, and production can take considerable time. This long lead time can be a disadvantage if programs are needed quickly or for a relatively small audience.

Coordination and rationalisation of program development through the AEC will be advantageous for programs of broad applicability. High developmental costs can be offset from travel and replacement allowances.

The obvious move in Australia, as overseas, is to deliver education and training into the place of work and into the home to ensure access which is convenient in terms of both location and time.

The overseas and Australian experience indicates that for large groups over large areas one-way video via satellite and return interactive audio using the telephone system, plus the use of facsimile and computer-text (email, bulletin boards and textconferencing), is the most pervasive and efficient combination of technologies. It is also the most economical in that large groups and flexibility in grouping and re-grouping, depending on needs, are possible. Satellite video is **not**, however, always the best educational option, nor should it be used to the exclusion of other options, like print materials or tapes.

For state, regional and cluster groups of schools audio and computer-based audiographics teleconferencing, as well as electronic mail and facsimile, provide an excellent range of options for almost all purposes.

Policies, provision and systems relating to TPD vary considerably across Australia. There is no feasible way nor is it necessary to rationalise or standardise these. Neither is it possible to ask all systems to stop what they are doing and begin again on a new national system.

Inherent in the diversity of systems in existence, however, are the ingredients of a cooperative national policy for courseware design and development, for an educational communications network and management infrastructures. If the vision of the 'ideal scenario' is shared by all stakeholders, then a cooperative national policy will assist them in making future decisions to steer development towards the effective and efficient use of telecommunications for professional development for teachers and, more generally, for all education and training across Australia.

Section 4 Characteristics of a Responsive Policy for Open Access for TPD

No policy on distance learning for professional development of teachers can operate in a policy vacuum, and a policy cannot be formulated in isolation. In particular, professional development through an open access policy needs to be consistent with policy formulation on the continuing education of teachers and teacher education generally. Neither of these areas as yet boasts a national policy and while the proposal of such specific policy lies beyond the task of this Project, nevertheless the general direction such a policy should take must be considered.

Nine criteria by which the appropriateness of professional development through distance learning policy proposals and their implementation can be evaluated will be outlined in this section within three main categories: professional, socio-political and feasibility criteria. These criteria were developed from consideration of previously published principles, policy statements and reports, emerging trends for the resolution of teacher education issues in Australia and from criteria for evaluating education policies proposed by Mitchell (1986).

The criteria also incorporate the Project Team's perception of national opinion as to the goals or ideal scenario which policy aims to create.

The nine criteria are that open access for professional development policy should:

with reference to the **teaching profession**,
(i) improve the quality of educational experiences for teachers and students;
(ii) improve equity of access to professional development;
(iii) support teacher professionalism;
(iv) support career planning for teachers;
(v) improve the working conditions of teachers;

in the **socio-political** area,
(vi) be democratic;
(vii) increase social justice;
(viii) value local identities;

and in terms of **feasibility**,
(ix) be realistic and achievable.

Each of these criteria contains a number of sub-elements which are elaborated in this section.

4.1 Criteria Relevant to the Teaching Profession

4.1.1 Professional development policy proposals should improve the quality of educational experiences for teachers and students.

In the final analysis, changes in educational practice should provide benefits for students as well as teachers: richer, varied, more individualised learning experiences attending to the personal, social, academic and economic needs of future citizens.

It is necessary to consider if the policy proposals are likely to provide such improvements in the quality of education.

4.1.2 Professional development policy proposals should improve equity of access to activities and programs.

Assessment of effectiveness in meeting this criterion involves consideration of those groups and individuals who may have difficulty in obtaining access to professional development activities and programs.

Access for teachers in government and non-government sectors of education in isolated and rural areas should be a priority in developing national policy. The policy should also be evaluated in the extent to which it mitigates the effects of the numerous factors that limit access. These include awareness of courses, course prerequisites, location, costs, quotas, course design, familiarity with delivery mode, position in school, availability of time and personal circumstances.

Special consideration needs to be given to disadvantaged groups such as unemployed teachers and those working in less desirable situations.

It must then be asked:

- Do the policy proposals improve awareness of and participation in professional development activities?
- Do funding formulae positively discriminate for teachers with special needs or in remote locations to ensure equity?

4.1.3 Professional development policy proposals should support teacher professionalism.

Several state reports referred to the issue of teacher professionalism. While no accepted terminology exists nationally, the Schools Council, The Australian Teachers Union, the Australian Teachers Federation and various state reports (e.g. NSW and Queensland) use the terminology of **professional** growth or development.

The need to strengthen teacher professionalism is clearly emerging. **Focus on Schools** (1989) states:

> *The organisational environment must encourage and support teachers' professionalism ... trust in the abilities and professional judgement of employees ... encourage staff to take responsibility for, and respond to, the needs of students.* (p.39).

A profession is characterised by possession of a body of skills and knowledge continually modified and improved by research, exercise of judgement over the specific contextual application of that skill and knowledge, a code of ethics and control over admission to the profession (Houle, cited by Brennan, 1990). Professionals have tended in the past to be self-employed, a situation that does not normally apply to teachers. Employers and educational institutions have become the dominant gatekeepers to the teaching profession while teachers' freedom to exercise professional judgement has been constrained by mandated requirements.

The social responsibilities of teaching led the Australian Teachers Union to promote a notion of democratic professionalism which:

> *does not seek to mystify professional work, nor to unreasonably restrict access to that work; [but] facilitates participation in decision-making by students, parents and others, and seeks to develop a broader understanding in the community of how it operates.*
> (Australian Teachers Union, 1991b, p.21)

The concept of professionalism increasingly includes accountability as well as responsibility in both the individual and collective sense.

As indicated above, there is a rhetoric about teacher professionalism in many recent documents by the executive management for practitioners. To a lesser extent, the rhetoric is also espoused by teachers themselves in the context of different conditions and environments of practice. Any cooperative national policy must aim ultimately to link all levels of educational and managerial policy and practice to create a professional teaching workforce.

Both in rhetoric and in the design of administrative and management structures, professional development policy should support teacher professionalism and with this in mind, the following questions may be asked:

- Do the policy proposals facilitate communication and collegiality amongst working professionals?
- Do the policy proposals enable dissemination of research findings and expert opinion on quality teaching and learning?
- Do the policy proposals encourage critical awareness in teachers of their professional practice?

4.1.4 Professional development policy proposals should facilitate career planning for teachers.

Professional development is part of a continuum from initial to continuing teacher education and is increasingly being viewed as a career-long necessity.

Various standardised procedural formulae have also been proposed using a 'carrots or sticks' approach usually based on prescriptions for quantity of TPD in terms of dollars and/or time. **Teachers Learning** (1988) proposed that 5% of Commonwealth Recurrent Grants to states be allocated for teacher development while the Ebbeck Report (**Teacher Education in Australia**, 1990) suggested a standard ten days or 2% of teachers' salaries. In **Australia's Teachers**, NBEET outlined a system of requirements, entitlements and options in an integrated model for teachers' career structures.

In the context of these recent reports, award agreements and special agreements in many states, procedural options already exist for the recognition of professional development activities for credit. These include:

- units of credit based on time or content;
- formal awards;
- salary increments;
- promotion;
- registration renewal; and
- professional recognition.

These options need to be explored for their educational usefulness in the career structures and life histories of teachers. Developments in award restructuring will take this into account. However, it must be noted that the integration of TPD with career structures is a complex task that does not fall within the brief of this Project. The policy framework proposed here must, however, contribute to the construction of flexible and acceptable mechanisms for the nation-wide recognition of TPD.

Questions relating to this criterion include:

- Do the policy proposals provide teachers with the power over self-determination of their careers?
- Do the policy proposals provide formal award, status or promotional incentives for teachers to undertake professional development?

4.1.5 Professional development policy should improve working conditions for all teachers and in particular, overcome the disadvantages of working in professional isolation.

Peer referral and consultation is a critical element in effectively and competently discharging professional obligations. Teachers in rural and remote schools as well as subject specialists in larger urban schools are frequently forced to rely entirely on their own ability and prior experience and training, as they lack the equipment, time and contacts to utilise the expertise of their counterparts.

While the importance of communication has already been stressed with relation to teacher professionalism, it may also be asked:

- Do the policy proposals alleviate the current adverse effects of geographic and situational professional isolation?

4.2 Socio-political Criteria

4.2.1 Professional development policy should be democratic.

This involves the policy reflecting *the goals and interests of [all] legitimate stakeholders, while still embodying the larger public interest*. (Mitchell, 1986).

Various interest groups have participated in the formulation of this professional development policy framework proposed in this Report. Their legitimate interests need to be incorporated and properly balanced throughout the process of policy formulation and implementation.

Questions that might be asked of the proposed policy and procedures adopted for its future realisation under this criterion are:

- Do the management structures for formulating and implementing the policy encourage decision-making as close as possible to the site of actions?
- Is policy formulation free from distortion in language and contradiction?
- Do stakeholders have ongoing involvement in the implementation and enactment of the policy?

4.2.2 Professional development should assist in attaining social justice.

Social justice in the educational context refers to achieving equity of outcomes for teachers and students of varied backgrounds currently disadvantaged (**Quality of Education Review Committee** (1985).

Educational disadvantage may be related to:

- rural and remote location;
- aboriginality;
- non-English speaking or other ethnic/cultural background;
- gender;
- professional isolation;
- socio-economic and personal circumstances; and
- exceptionality.

It should be asked:

- Do the policy proposals assist in redressing issues of disadvantage?

4.2.3 Professional development policy should respect and value local identities and aspirations.

The demands of democracy have the potential to standardise or reduce commitments to the lowest common denominator. There may be a tendency also to regard 'different' as 'deficient'. Together, local realities form a beneficial amalgam of diversity to be welded for the interests of all rather than overriden for the sake of uniformity and ease of management. The quest for excellence also demands that local and personal interests are supported and allowed to flourish.

We might ask:

- Do the policy proposals facilitate input into the national development of the teaching profession from the richness of knowledge and perspectives of community groups?
- Do policy proposals allow for local needs and expertise to be incorporated into TPD activities?

4.3 Feasibility Criterion

4.3.1 Professional development policy should be realistic and feasible.

The extent to which various dimensions of realism and feasibility are met in a national policy may be assessed by answering the following questions:

- Do the policy proposals show a favourable cost-benefit compared to other alternatives?
- Are the policy proposals economically and politically feasible?

Note: The distinction may be made between 'cost-benefit', cost effectiveness' and 'cost utility'. While the DLITE Project did not undertake a formal enquiry into these, nor was it required to do so, there are many aspects of cost-benefit in the Report. Further research is needed in this area.

Economic feasibility suggests that the policy should encourage the development of a national distance learning infrastructure which includes a system-wide communications technology infrastructure.

The development of infrastructures for the distance learning of teachers cannot occur in isolation from the development of infrastructures for other educational purposes. The communications infrastructure of a nation is a shared facility of benefit to education as a whole, to teacher education, and to commerce and industry, generally. A professional development policy should support a national perspective in the future development of communications infrastructure and encourage the interlinkage of state communications infrastructures. It should also seek to maximise the benefits to education of telecommunications policy.

Political feasibility entails consideration of various political interests and integration with other policy areas. Therefore:

- Are the policy proposals consistent and integrated with other policy, for example, in teacher and distance education?
- Does other existing policy lend maximum support to the framework proposed in this Report?
- Do the policy proposals provide a sound basis for future planning and guidelines for long-term rather than short-term actions?
- Do the policy proposals have both an appropriate theory of teaching and learning and an adequate conception of human behaviour in complex organisations (Mitchell, 1986) with regard to professional development?
- Do the policy proposals recognise and attempt to ameliorate the organisational, political, ideological and socio-cultural forces which will resist its implementation?
- Will the proposed policy framework be sufficiently flexible in its implementation to be responsive to local needs while at the same time provide overall guidance towards agreed national goals?

4.4 Summary

These criteria provide a basis on which the proposed policy framework may be evaluated in terms of desirable aims for education and the teaching profession, social and political values and general feasibility. The questions included for each criterion need to be answered by the policy statements in the following section, and those answers are diffused throughout those policy statements. That is, there is not a simple correlation between each question and a specific policy statement. Some questions may be answered only through implementation.

The criteria may also be applied to subsequently formulated policy, and the strategies adopted for implementation. Section 5 elaborates the proposed policy framework developed through the extensive consultative processes of the DLITE project.

Section 5 Proposals for a Policy Framework

Evolving from the information and considerations of the previous Sections a number of key policy elements have been crystalised. These are presented here, with brief discussion of each, grouped according to three general policy areas:

(i) the design and development of professional development activities for open access;
(ii) the necessary communications infrastructure; and
(iii) the management or organisational infrastructure for coordinating, operating, maintaining, supporting and monitoring professional development through distance learning.

It is expected that these proposals, when adopted, will comprise a national cooperative policy for the application of open access methods and systems to TPD.

5.1 Program Design and Development Infrastructure

5.1.1 The planning, design, development and delivery of open access professional development activities will be a collaborative process involving employers, providers and teachers.

There is a dominant perception in many states that most professional development activities and continuing education programs have been formally planned and implemented by employers, Higher Education Institutions, or those responsible for policy formulation who are usually in executive management without participation of teachers.

Those people who are required to enact the policy, usually practitioners, are seen to have little part in this whole process. At best, they have been permitted a passive consultative role. The conscious and unconscious assumption by stakeholders is that there is a policy-practice dichotomy.

'Collaboration' implies a 'working together' of all relevant parties to ensure the activities are worthwhile to the users. Therefore, in all phases of planning, development, design, implementation, enactment and assessment, links need to be established among various groups for greater effectiveness and productivity. That is, a collaborative process assumes a community of participants from all levels of decision-making who themselves engage in decision-taking which reflects two-way communication and interaction as well as sampling diverse value positions.

This conception of collaboration could also lead to a stronger commitment to joint development and facilitation of TPD activities between local practitioners and central support units encouraging local ownership which is a particularly essential consideration in aboriginal communities.

Strategy Ideas

- A first step in implementing this policy idea is for all employers, support elements and providers to ensure that practising teachers, perhaps through their professional associations and unions, are included and/or represented in planning and advisory groups for professional development and teacher education generally. Participation and collaboration then need to be publicised. The Tasmanian, Western Australian and Queensland consortia are examples of collaboration at the State level.
- Communications technology can be used to integrate local and supporting efforts for TPD and to involve people, not otherwise able to take part, in the planning, design, development and evaluation of professional development activities.

5.1.2 A comprehensive range of professional development activities will be made available in a variety of open access modes which adopt appropriate adult learning and distance learning principles.

If the goal of facilitating the professional development of all teachers throughout Australia via open access is accepted, then significant work needs to be undertaken to develop a wide and diverse range of activities. This is necessary for a variety of reasons, including:

- different individuals and groups will require different professional development activities according to needs;
- there are multiple contexts in which these needs will have to be met; and
- the needs of individuals and groups will change with changes in values, perspectives and the conditions of work within which these needs have to be met.

Up until the present, there has been no recognised, coherent and systematic attempt to produce professional development programs and activities for all teachers in Australia in open access formats. While there have been individual activities and programs of excellence around the nation and within states and territories, these have been presented as single entities generally unrelated to other professional development initiatives or to credit-granting mechanisms.

Furthermore, when activities have been produced in the 'distance mode', this was usually limited to hard-copy print format with, perhaps, audio and/or video tapes. Recently there have been some attempts to include computer assisted programs. With the range of existing and emerging communications technologies, including broadcast radio and television and various forms of interactive teleconferencing, it is now time to look at an expanded variety of modes for the design and delivery of open access.

Strategy Ideas

- The strategy of targeted funding by the Commonwealth government should be used to accelerate the conversion of existing award and non-award professional development programs in top priority areas to open access formats.

  This would include:
  - conversion of existing face-to-face activities to open access mode; and
  - conversion of existing hard-copy (print) distance education courses to modularised segments using communications technology as appropriate.

- Specifications for **all** new professional development activities funded by the Commonwealth government and other systems should ensure that appropriate open access options are considered in both the planning and the design of the activities.

  It is noteworthy here that existing DEET Projects of National Significance for the development of professional development ('inservice') modules do not specify the need for distance learning versions.

- Higher Education Institutions, particularly the DECs, should increase the variety of media and delivery options when converting subject units/modules to open access mode. (Note that the TAFE sector in a number of States is undertaking this process for its print-based external studies courses.)

- The initiatives of teachers, professional associations, schools and school clusters should be supported in terms of planning, production, and even 'exporting' their activities/programs/packages to others.

- A major national goal should be to ensure a significant increase in award and non-award professional development activities available in the open access mode by 1995.

- Existing professional development initiatives should be documented and disseminated listing availability options. This strategy relates also to proposed policy item 5.3.3 on a database for open access professional development activities.

5.1.3 Locally initiated professional dialogue, support and problem-solving is an essential element in TPD and the use of distance communications facilities for this purpose will be both encouraged and resourced.

It is important that the use of distance communication technology not be restricted to the off-loading of prepackaged programs. Rather, such technologies should also be used to promote collegial, peer-to-peer networking between teachers as a means of exchanging effective approaches, providing consultancy and support and facilitating concentration of effort on common problems.

Such networking would mean that knowledge and skills available in localities are used to greater effect and that packaged programs have practical application.

Strategy Ideas

- Funding and access mechanisms need to enable growth of informal networks. Professional associations can play an important role in facilitating this and should be supported to do so.
- Ideas for networking should be identified and publicised, e.g. uses of electronic bulletin boards and audio teleconferencing.
- Seeding grants could be allocated for networking projects on priority topics.

5.1.4 Research will be supported for innovative uses of communications technologies for the professional development of teachers.

Open access through distance education and the use of communications technology can be an effective means for facilitating professional development. However, as the U.S. Congress Office of Technology Assessment (1989) concluded:

> *There is no single best model of distance learning. The quality and effectiveness of distance learning are determined by instructional design and technique, the selection of appropriate technologies, and the quality of interaction afforded to learners.*

The report also noted that the federal government could contribute greatly to the quality and effectiveness of distance education through its traditional role in providing funding to support research. Similar benefits of quality learning and education will apply to the Australian situation if a systematic research program is implemented.

During 1989-90 in Australia there have been many millions of dollars spent on, or committed to, communications technologies for education. This includes, for example, approximately $3.27 million for videoconferencing equipment in the tertiary sector and $2 million for first year university programs by television. On the other hand, research into any aspect of this type of education seems to be very limited. It is a matter of urgency that research be undertaken to avoid duplication of effort, failed programs and wastage of funds.

Four types of research are needed:

(i) **mapping** to determine the existing provision of courseware and equipment;
(ii) **basic research** on learning via distance delivery;
(iii) **applied** studies to test the quality and type of open access activities against the quality of learning. Effective open access program design models need to be identified, developed and tested; and
(iv) **evaluation** to assess the impact of policies and practices in terms of outcomes and benefits to teachers and children.

Priorities for research, in the view of the Project Team and participants of the Melbourne Forum conducted as part of this study are:

(1) the quality and effectiveness of open access/distance learning options including standards to assess and accredit courses using communications technologies;
(2) 'instructional design' and techniques relating to the various open access options;
(3) the selection of appropriate technologies to meet educational objectives; and
(4) the quality and importance of interaction in various open access options.

Strategy Ideas

- The AEC commission the national mapping required.
- Telecommunications carriers should be approached to jointly fund research into the use of communications technology for open access education. These projects could focus on selected technologies.
- The ARC should be requested to list this area of research as one of national priority.
- State Consortia for TPD should include research in their terms of reference.
- An institution should be commissioned to keep an electronic register of relevant Australian research projects which will be accessed through Australian Academic and Research Network [AARNET], and in turn work with the International Council for Distance Learning database that the British Open University is maintaining for the Commonwealth of Learning.

5.1.5 While encouraging minimal duplication, all higher education institutions and other providers involved in the provision of professional development activities for teachers will be supported to ensure equity of access to those programs through open access modes.

Of particular concern across the country is the present federal government policy on distance education in HEIs which has led to a number of 'non-DECs' (universities without Distance Education Centres) withdrawing from distance education since a portion of their funding must transfer to a DEC for course development. This has extended not only to the formal award programs but also to non-award continuing professional development activities. The original intention was that the non-DECs should remain, where appropriate, as specialist providers of unique courses by external studies.

There needs to be some incentive for all HEIs to enter into cooperative arrangements with each other and with other providers to extend their professional development offerings into the open access mode so that the rich resources of all institutions are made accessible to all teachers throughout Australia. Although the non-DEC/specialist providers have entered into agreements with DECs, it is also true that some former distance providers conjured up alternative extension programs or 'flexible offerings' for explicitly political or educational reasons.

Beyond ensuring the economic viability of DECs and their continued and improved services for TPD, the DEC oligopoly over 'external studies' is seen by many interest groups in this Project to be impacting negatively on the quality of facilities for TPD. Policies which act as deterrents or result in under-resourced and/or inadequate alternative provision require revision. Open access via telecommunications should, and likely will, increasingly become a tool and an educational resource for all organisations involved in TPD for both internal and off-campus students.

In addition, there is an increasing range of technologies that support cooperative arrangements. Electronic mail, facsimile, computer assisted learning and flexible attendance times have not only blurred the distinction between 'internal' and 'external' study but also offer possibilities of more consultative and systematic approaches for HEIs to professional development. Until recently, many HEIs have employed resources mainly to improve communications facilities for administrative purposes but there is now a rapid growth in the use of these facilities for teaching purposes.

Any funding scheme to increase the distance learning and communications technology options of professional development should, therefore, be open to all providers, and the proposed policy of differential (lower) funding for external students should be reviewed. It is now increasingly possible for all providers to access communications and information systems for the development and delivery of professional development activities, and they should be supported in the extension of their services in these ways.

Strategy Ideas

- Deregulation of higher education distance provisions for teachers should be supported.

5.1.6 Professional development activities will be designed for maximum flexibility and portability.

Portability is a complex issue.

Portability in the broad sense is **the capacity of an item to be used in an environment different from that in which it was developed.** It is limited by technical and human factors (Collis and De Diana, 1990) and while there may always be some technical difficulties which remain unresolved for some time, the human factors are likely to be even more significant in the long term. Technological incompatibility occurs through many factors such as different computer languages, operating systems and memory requirements, and while major projects on interfacing and protocols are ongoing there is as yet no clear directive for future development. On the human side, differences in curriculum, pedagogy and didactic style will restrict general applicability. It must also be recognised that technology and educational software reflect the cultural values and assumptions of the society that developed it, thus restricting its acceptance and usefulness in other cultures.

Part of the rationale for this policy proposal is economy of scale for professional development activities of national relevance. The proposed policy framework should guide providers in the design and production of courses or open access packages in such a way that they can be used by a range of teacher groups across the country.

Sensitivity to the technological, cultural and other factors limiting portability would be an important first step in improving portability. 'Localisation' strategies and the involvement of teachers in all phases of courseware design and development is also advisable as indicated in 5.1.1. (De Diana and Collis, 1990).

In some cases a package may be just a conceptual framework so people in local contexts can select appropriate content; in other cases, it may be a total package which can be used without modification anywhere in the country. It is conceivable, for example, that certain programs in 'leadership' could be produced for delivery throughout Australia by satellite video with state or locally valued content added through audio teleconference or local workshops. Many options like this need to be considered in the design and production of activities to provide maximum flexibility and portability. It is accepted that many local and informal activities may never be portable in this sense.

Policy on the regulation, financing and support systems for computer software are areas where governments may exert significant influence over portability (Olivieri, 1990). Standardisation policies, copyright, tax incentives to buy or adapt software, and incentives or sponsorship of research, development or adaptation are areas through which government leverage may improve portability.

Another aspect of portability relates to obtaining equivalent credit and using the professional development credit across systems, states and tertiary institutions towards awards or for promotional purposes (credit transfer or portability).

When this statement is taken in combination with 5.1.2, then the guiding principles for the development of activities for open access are:

- adult learning principles are employed;
- distance learning principles are employed;
- economies of scale are considered where appropriate;
- general applicability/usefulness will be considered in program design and development;
- flexibility of use will be maximised, for example through modularisation, sequencing, times of entry and exit, etc. ('open learning'); and
- sympathy with local needs will be achieved through involvement of users in all phases of planning and development and through local strategies to particularise broader areas of the content core.

Strategy Ideas

- The AEC, employers and Deans of Teacher Education in HEIs need to initiate development of national guidelines for the portability of award and non-award professional development activities.
- A coordinated, cooperative approach to program development should be adopted by the AEC.
- National learning exchanges and workshops on TPD should be sponsored to share expertise and materials.

5.2 Communications Infrastructure

5.2.1 State and Commonwealth governments will collaborate to develop a national communications infrastructure for open access to education and training.

It is the responsibility of the State and Commonwealth governments to collaborate on and fund the establishment of a national communications infrastructure for equity of access to education and training and to make optimum use of scarce resources and expertise. The new AEC Working Party on a National Communications Framework for Educational Delivery seems to provide a mechanism with the potential to make collaboration on a national infrastructure a reality. It is expected that open access for TPD will be an important early consideration of this Working Party.

There are already several state level systems being established independently and there are the rudiments of a university videoconferencing network evolving among universities and TAFE systems. However, coordination of effort to date has been minimal. It is likely that if the present circumstances prevail the 'railway gauge' syndrome will again be experienced as the state systems meet at the borders.

No single institution or individual system can afford to set up a complete communications technology infrastructure for professional development. Where this is being attempted it is resulting in inadequate and incompatible systems. This is educationally and economically indefensible.

The communications system for education and training is the responsibility of governments as are, for example, other sectors of the country's public service activity. A national telecommunications system is analogous to a national transport system. It should be noted, however, that private industry is also showing considerable interest in such an infrastructure, perhaps as part of training guarantee requirements, and will be willing to participate in the establishment and maintenance of such a system for its own training and administrative purposes. The Queensland Open Learning Centre Network, the Adelaide TAFE Network, The Victorian TAFE Off-Campus Network, the NSW TAFE Open Learning Network and the WA Pilbara 'Livenet' Project, are good examples of this general direction. These have been supported strongly by state governments and its agencies and are receiving increasing support from industry.

A national telecommunications policy needs to reflect the special place of education in society and to take account of the fact that education does not of necessity or primarily represent a major revenue-generating 'industry'. It is a public service system which requires specific legislation to support its functions. Because the telecommunications acts are being reviewed, it is timely for submissions to be made to the federal Department of Transport and Communications [DOTAC] in respect of the needs of education.

Strategy Ideas

- The desirable strategy will likely be a combination of some legislation to give 'education' special consideration in terms of access and fees and a collaboration of educational authorities to enable bulk purchase of telecommunications capacity on various systems. The issues relating to this matter are contained within the terms of reference of the AEC Working Party.

5.2.2 Open access professional development activities will be accessible to every teacher in Australia via multimedia communications facilities.

In addition to the national infrastructure proposed in 5.2.1, a comprehensive system will aim ultimately at providing access to professional development activities via communications technology which may be located in every school and education centre in Australia and ultimately in people's homes. In the interim, however, it is accepted that a network of community centres may be the first point of access for many teachers. These centres (variously called support centres, teachers' centres, education resource centres, open learning centres, study centres, 'telecottages') would continue to have a role in these communities for the long term, although their roles may shift to alternative kinds of informational, educational, training and support services to the community.

Communications technologies are becoming relatively commonplace in many schools as indicated in Section 3.3 and Appendix G. These technologies (and networks) are being used mostly for school curriculum and administrative purposes. It is necessary now to extend provision of these technologies to all schools and then to stimulate their use for TPD activities.

Every school should have an open access communication centre or 'classroom studio', which in large schools may be a separate room or rooms specifically designed for the purpose or in small schools may be a special corner or area set aside, perhaps in the library.

The basic equipment required for electronic mail (computer-text conferencing), facsimile, audio teleconferencing and satellite video conferencing (live one-way video with interactive audio) is:

- microcomputer and modem;
- facsimile;
- loudspeaker telephone;
- one or two telephone lines;
- a satellite receiving dish and related equipment;
- a VCR and video monitor.

It is estimated that this would cost an average of $10,000 per school. However, almost 50 per cent of such provision already exists across Australia, so the total cost would be only about $50 - $60 million to ensure a basic communication centre in every school.

An important aspect of this communication centre is that teachers (and students) will have the power to send as well as receive. They can, therefore, initiate their own networking for peer-to-peer professional support and tap regionally or centrally developed initiatives.

These school-based centres would also provide some commercial opportunities for schools through their use by other community groups, industry and business.

Apportioning the recurrent costs of using these facilities will need to be determined through school and system policies. The potential for cost substitution from other account categories such as travel will need to be noted. Productivity gains through the use of communications technology will also need to be considered. Communications can no longer be seen as a luxury or as an extra cost, but rather as essential equipment for each school to access resources and services to enhance teaching and learning.

In remote areas of Australia the costs remain significantly higher for the delivery, installation, maintenance and recurrent charges of communications equipment. Remote areas will require differential funding in their favour because of these higher costs.

It is important that school-level access to a wider range of selected communications facilities and systems be extended as quickly as possible if the feasibility of any nationwide plan for TPD through open access is to be instituted.

Another potential of a comprehensive school-based communication system is that any and all providers can enter into a subscription-driven model for the provision of curriculum support and TPD. This model is common overseas and, with the devolution of funding to school level in Australia, schools should have the resources and flexibility to make purchasing decisions to meet their needs.

Strategy Ideas

- An audit of all existing communications equipment and facilities in schools would provide the basis for detailed planning for a comprehensive system for all schools. This exercise should also be referred to the AEC.
- The Commonwealth government should consider a 'flag ship' strategy for funding the provision of communications technology for every school, similar to the science laboratories and school library projects of the 1960s and 1970s. It is estimated that such a project would cost $50 - $60 million and could be instituted over a three-year period. A dollar-for-dollar funding arrangement with the states could be an option. As with the school libraries project, where an investment of $500 million over 12 years by the Commonwealth triggered a total expenditure of around $1000 million from state and local sources, significant additional sponsorships could well be activated.
- Alternatively, smaller projects to stimulate the development of open access teachers' professional activities could be funded, and this, in turn, would stimulate schools and systems to acquire the equipment necessary to participate. This could be effected through the proposed National Rural Education Training and Coordinating Committee.
- The least cost option, if taken on its own, would be for the Commonwealth government to continue its strategy of supporting with seed money the existing and evolving state-by-state projects with a view to steering them towards a national infrastructure through specific conditions on such funding.

5.2.3 Communications facilities and services for educational use will be co-located where this provides benefits of economy and access.

In smaller communities, particularly in rural Australia, it makes economic sense for all levels of government, educational institutions, industry and other groups with similar service, educational and training goals and needs to co-locate their facilities and services. This may be within some type of education centre, open learning centre or school-based open access classroom studio in the first instance. As demand grows so can the distribution of facilities and services. With the establishment of teacher support centres, consortia and the existing resource-type centres, there appears to be a range of choice of locations over geographic areas. Rural and remote areas will require additional funding assistance as previously explained. There needs to be collaboration of all users sharing a communications technology infrastructure at the local level.

The already extensive open access infrastructure of the TAFE sector could provide a valuable resource in this regard.

Strategy Ideas

- Incentives for co-location of open access facilities could be instituted through resource agreements, as is already being used to encourage sharing of resources and credit transfer in the Commonwealth government strategy for Rural Education and Training outlined in **A Fair Go**, (1989). School-TAFE-HEI-Industry cooperative ventures should be encouraged or coerced.
- Existing support centres and education centres could be funded to expand their services as open access learning centres.

5.3 Management Infrastructure

5.3.1 The professional development of all teachers will be the joint responsibility of government, employers, providers, teachers and school communities through a collaborative management infrastructure.

The main concern with regard to this statement is 'Who pays?' Other areas of responsibility concern leadership, provision and participation. There already exist funding policies of relevance, and a general principle seems to be that for systems-initiated change the employer is responsible for meeting the costs of adequate professional development to implement new curricula or administrative procedures. It is usually accepted that teachers should and do pay for their own personal professional development where this is not directly linked to school or system needs. In between, a grey area exists in apportioning personal and school benefit. Through their individual and professional association activities teachers pay for a considerable amount of professional development in terms of both their own time and monetary costs. Some employers (e.g. SDA church) recognise the considerable benefit to schools and students of many of these activities and are prepared to sponsor professional association membership and the activities of these groups.

There is, however, no clear line which can be mandated one way or another. Present practice of shared and negotiated responsibility is likely to persist, and the above proposal reinforces that practice. However, although budgeting and responsibility for the selection of professional development activities are now occurring at the school level, the demands of mandated system changes leave very little money, time or energy for school or teacher- initiated activities.

The leadership role of principals in terms of TPD is very important. As the immediate administrative superior of teachers and manager of the school, the principal has an overall responsibility for staff development. This responsibility may be delegated, to some extent as is occurring with the creation of professional development coordinator positions within schools, but the principal's leadership remains important in setting the climate which will facilitate and inspire TPD.

Special mention of professional associations needs to be made at this point. It is through these organisations that teachers join to form organised self-help groups at regional, state and national levels. An enormous amount of volunteer energy goes into these organisations, and thousands of teachers, through subscriptions, look to these as the main source of relevant professional development through both special activities and state and national conferences. In any policy proposal, the professional associations need to be included as a major force in teacher development and to have access to support for their activities. However, like others, they cannot be 'stand-alone' agencies in the overall provision of professional development. Government and non-government systems already have a professional development infrastructure. Links need to be established with other relevant outside groups. Inter-system collaboration and sharing has considerable obvious benefits, but, it is unlikely to occur without some form of incentive.

Strategy Ideas

- Employers/systems and schools will develop a formula for budgeting professional development that provides for system, regional, school and individual initiatives according to their relative negotiated needs.

  An example, from South Australia, of how this might work has already been described in Section 3.2.2.2.

- Commonwealth and state governments, other employers, teacher unions, registration boards, and professional associations will contribute, perhaps through a consortium, to resourcing the development and maintenance of the management infrastructure. This need not necessarily comprise a permanent, bureaucratic structure, but could involve the networking of nominated reference personnel at various levels. Organisations may contribute through offering their resources, time, expertise, secondments or funds.

5.3.2 National coordination of professional development will be effected through a coordinated decentralised network of local, regional, state and national representative bodies.

The general notion of a 'coordinated decentralisation' model is that it is a system whereby local initiatives are regionally coordinated and centrally supported. In this sense, 'coordination' is not synonymous with 'control', nor is this to deny that there may be regional and systems-wide initiatives as well. Alternative extreme 'models' are: centralised systems where sensitivity to local needs is lost; and fragmented, decentralised systems where transferability and economies of scale are lost.

This policy suggestion cannot be limited to teacher education or distance education because of its far-reaching implications. In every state there are moves to decentralise school education. In the non-government school sector this has been the situation for many years. This general restructuring of the administration of state school education systems has many implications for schools and TPD. It may lead, for example, to a fragmentation of efforts unless there is some mechanism for coordination at the regional (district, area) and state levels. There would also seem to be a strong case for coordination of some activities at the national level.

Coordination also builds coherence in the discharge of public responsibility for education and is now both possible and necessary in the context of award restructuring and review of labour processes and work of teachers.

At the local level, whether schools be isolated or not, school principals need to accept or delegate to other members of the school's staff the responsibility for stimulating and coordinating professional development activities. Duties would include providing assistance to individual teachers on professional development, coordinating needs assessments, providing information on available avenues of assistance, organising and monitoring activities and representing the school at cluster level, the first level of coordination of professional development.

School clusters or networks have become important settings for support and sharing. These need to be reinforced and encouraged to cross state, system and territory borders. There needs to be some flexibility in systems' policies to permit sharing as well as flexible structures adapted to local situations and lifestyles. These clusters also often represent the best point at which links with other local departments and institutions can take place.

Regionally (or at the district or area level) the next level of coordination needs to take place. In most state and Catholic systems this occurs through a regional office, education/teachers' centres or support centres. The Queensland Department of Education's plan is to establish 45 support centres with a Human Resources Manager based in each one. NSW is also establishing around 40 Educational Resource Centres (ERCs) at the district level with similar functions. There is evidence that collaborative, regional initiatives for coordinating TPD are evolving. The regional joint venture of the North Coast Region of the NSW Department of School Education and the University of New England, Northern Rivers, is an example, as is the far north Queensland Peninsula Region's collaboration with James Cook University on the Remote Area Teacher Education Project.

At the state level there needs to be a collaborative, representative mechanism for all relevant groups to come together to plan, coordinate and generally monitor the professional development of teachers as well as evaluate achievement. Such a mechanism will provide further networking and economies of scale as well as provide a gateway to national systems and activities. At the same time the rights of various participants and systems need to be preserved and not swamped by larger systems overriding the representation of smaller systems. These rights of representation must follow through to all other levels of coordination. The Commonwealth Education Centre network could be enhanced in its role of providing neutral territory for coordinating and organising TPD activities with various educational systems and non-systemic schools. This national network could also play a brokerage role in negotiation of policy issues.

The proactive level of such state bodies may need to be explored. Such consortia are already in existence or being planned in a number of states (Tasmania, Western Australia, Queensland). In other states and territories, coordinated developments similar to those mentioned above, may need fostering and may well need to grow from the regional to the state level.

Nationally, there is no existing mechanism nor any organising body to take on the coordination which will eventually be required. The preferred model will likely be the networking of state-level consortia with the inclusion of certain other relevant, parallel state and national bodies, a national TPD Conference. This will facilitate the coordinated development of a responsive and comprehensive range of professional development activities and the communications technology infrastructure referred to in the first two categories of this proposed policy framework. Negotiations of credit value and portability of credit could be addressed through such an agency.

The matter of commercial, private providers needs to be considered in the context of coordination. Presumably, if there is a national system, entrepreneurs will want to capitalise on the expanded markets in various ways. Guidelines and mechanisms for accreditation of private TPD activities will need to be formulated and charges established for access to state communications infrastructures.

Research and constructive evaluation both of professional development and training activities themselves and of the implementation and impact of policy also need to be the responsibility of all parts of a national management infrastructure.

The timing of the developments inherent in this policy proposal will need to mesh with other initiatives at the national level to ensure that the various linkages are made. For example, the work of the AEC Working Parties on National Communications and the National Curriculum and the projects on the Quality of Teaching and Learning and on Effective Schools need to be coordinated.

The coordinated-decentralised networking mechanism proposed here attempts to take account of the rather different attitudes and structures existing across the country permitting flexibility and diversity while pointing towards a coordinated system which will be finely balanced between regulated and deregulated while still providing the benefits of adequate coordination.

Strategy Ideas

- Seed money should be provided for the establishment of state consortia and to facilitate national joint planning for TPD.
- The National Rural Education and Training Coordinating Committee (joint AEC and MOVEET) proposed in **Towards a National Education and Training Strategy for Rural Australia** (NBEET, 1991) should be strongly supported and give particular attention to coordinating professional development for teachers.
- support for Commonwealth Education Centres should be continued and increased to facilitate their role in TPD in collaboration with state support centres for schools.

5.3.3 Teachers, regardless of location, will be able to access information regarding professional development activities throughout Australia and eventually overseas.

One aspect of accessibility is that information about professional development programs or activities must be available to teachers to inform choices among options and means of participation. Such information ideally should be in the form of an electronic database and accessible online through microcomputers and modems. Other variations such as hard-copy print, floppy disks and CD-ROM disks can also be distributed as and where required.

A national database should contain all the programs and activities available throughout Australia and eventually it should provide access to information about programs offered by overseas providers. There is a concern, however, that this not become another electronic educational garbage can. Each entry must be 'tagged' in a number of ways which clearly indicate the level, quality and value (e.g. in terms of credit) of the activity described, and must be updated regularly. This implies a mechanism or set of screening points before entries are placed on the database. Criteria will need to be strictly applied.

An effective database for TPD will also need to store information on established networks for interchange on specific areas of interest such as Computer Pals.

A number of database projects relevant to this policy are underway (Figure 4 below).

(a) The Job and Course Explorer (JAC) software system is being adopted for all tertiary level award courses in at least five states under the sponsorship of DEET. In Queensland the Open Learning Project has provided additional funding to ensure that the 'Project Pathways' database of the Queensland Education Department and the Department of Employment, Vocational Education, Training and Industrial Relations which uses JAC software will include all non-award activities, including industry training. The service will be offered through Open Learning Centres and public libraries, as well as high schools and other centres.

(b) The proposed Queensland Consortium plans to set up an electronic database of all TPD activities. Discussions on sharing with the existing 'Project Pathways' are proceeding.

(c) In the Northern Territory, Tasmania, Queensland and South Australia all government departmental information, including Human Resources information, is online.

(d) The Schools Professional Development consortium in Western Australia is creating a database of local 'lighthouse' personnel.

(e) In South Australia professional development information, including courses outside education, is being transferred through NEXUS but there are no distance education components as yet.

(f) Professional development activities databases are being compiled by the Mathematics, Science and English Teachers' Associations with DEET funding ($150,000 each).

(g) The Credit Bank Authority based at Monash University will require a comprehensive database of the whole range of award and non-award activities in higher education if it is to be effective.

(h) The Curriculum Corporation owned by the state and Commonwealth Ministers of Education has databases on library, curriculum materials and projects as well as an online infrastructure available to every school in Australia.

(i) The Commonwealth of Learning (a distance learning cooperative of all Commonwealth countries) has developed an international database of all distance learning courses and relevant publications in all countries of the Commonwealth. This database which is available online and on CDROM is based at the British Open University.

Figure 4: Databases of relevance to TPD.

The development, maintenance and operation of an information database for TPD through open access requires a national perspective. Any one of the Australian initiatives listed could become the base for such a service. The state-level consortia could, for example, be the coordinating network to ensure compatibility of information and systems.

The scope of such a database is also of relevance. Courses and training of all kinds beyond teacher education, including those in private industry, can be relevant to teachers' interests and needs. Training for other school staff could also be included. It is, therefore, not a simple task to bring together all these elements.

Strategy Ideas

- A comprehensive mapping exercise of present database development needs to be undertaken.
- One central agency which has the support of all systems could be funded to establish a single national database and manage its use. This could be a joint venture with private industry. It would generate revenue from a 'user pays' policy, both through providers wishing to make entries and

users accessing the information. The Discovery Training Network in British Columbia, Canada with 175,000 entries is an example of such a scheme at a provincial (state) level.

- A national database need not be in a single location. A number of smaller databases, probably state-based, could be networked with gateways to form a national information service.

5.3.4 Training the providers of TPD and school teachers in the use of communication methods and technologies will be integral to any plan for open access professional development.

For any curriculum or administrative change to be effective there is the need for re-education and re-training of all participants. Specific budget allocation for this aspect of professional development should accompany any change process.

Literature on change implementation shows that participants' understanding of the intended change, their conditions of work affecting that understanding and the change itself all influence the implementation of new practices. Possession of the necessary technical skills is also essential. The omission of adequate re-education and support has been a flaw in many 'innovation' implementation programs and accounts for many failed attempts to change educational practices.

Training programs should be planned in collaboration with the client groups and must involve:

- design and development of curriculum and materials;
- teaching strategies; and
- use of equipment.

With the proliferation of communication technologies in schools across Australia, it is now necessary for teachers to be prepared to exploit existing resources in their classroom teaching as well as experiment and integrate these technologies within existing professional development and open access systems.

As a matter of urgency, this area of education and training should be addressed in undergraduate and graduate teacher education courses, as well as in non-award professional development activities in association with specific applications.

The providers of open access programs require training in the design of programs to take advantage of existing and emerging communication technologies.

Strategy Ideas

- Funding should be provided to develop a range of award and non-award training programs in the technologies and techniques of open access education and training. These could be developed to accompany new and existing projects and could themselves be delivered in the open access mode.
- Incentives in the form of credit and promotional value should be given to teachers and tertiary lecturers who develop these new skills.
- Due consideration of training needs should attend all new projects.

5.3.5 There will be greater access for teachers to recognised awards, with increasing diversity of professionally-accredited programs and flexible and interactive pathways for accreditation.

There are two major issues relating to the matter of formal recognition for TPD.

The first is the problem of quotas in universities which have put a cap on the number of teachers able to enrol in post-employment award courses and higher degree programs. In every state except Tasmania and the ACT there is a large unmet demand for such places. For example, in Queensland there were 1600 teachers competing for 400 places in the B.Ed. post-initial accreditation in 1991, and Deakin University turned away an estimated 150 applicants because of lack of places. For many of these applicants, the most preferable mode of study is by distance learning. It is therefore necessary that all HEIs and state and national governments address this matter if participation is to be increased.

The second is that credit for non-award professional development activities, even for experiential learning, is an important incentive for teachers to undertake such activities. A number of HEIs currently grant partial credit for such activities (e.g. or ELIC and FLIP courses) but there is neither consistent policy nor guidelines across institutions. The main issues are:

- HEIs generally insist on retaining control over their own affairs, such as granting credit;
- HEIs are reluctant to grant credit retrospectively for non-conventional learning; and
- HEIs need to develop acceptable means of assessing the learning which has occurred as opposed to people merely demonstrating participation.

Strategy Ideas

- The newly established Credit Transfer Authority which now offers a centralised mechanism for granting credit for non-award work, for credit comparability and for credit banking should receive the full cooperation of all HEIs through acceptance of its credit statements at face value.
- TPD in all areas, not just Mathematics and Science, should be a priority for negotiation of growth bids between the Commonwealth Government and HEIs.
- Through Resource Agreements the Commonwealth Government should continue to encourage credit transfer and the accreditation of non-award activities which will alleviate demand pressures for HEI courses.
- Teachers' awards should incorporate alternative mechanisms for achieving higher trained status such as recognition for non-HEI courses.
- The Deans of Teacher Education should lobby their institutions to ensure that quotas are sufficient to meet unmet demand, especially through open access options and that their equity programs place a high priority on TPD for teachers in rural areas.

5.3.6 Professional development activities in all forms will be recognised and valued by all employers, including for promotional purposes.

Award restructuring has resulted in professional development being included in industrial conditions and negotiations. The desirability of recognition being valid across the states also needs to be addressed. Alternative routes to upgrading qualifications are evolving. For example, in Queensland, four year status can be gained by completion of 150 out-of-school hours of professional development from approved providers. The significance of incentives needs to be enshrined in policy.

In the words of one contributor to the project:

> *We need therefore to think of a structural solution which sees the solution to the problem as embedded in the very issue we are seeking to address. ... What is required is a career development approach which will drive the professional development of teachers in appropriate directions and at appropriate levels of funding; including of course, in the context of distance learning.*
>
> ***Teacher appraisal** is the key to this. The professional growth of the teacher through pre-service education to induction to in-service education and training is linked through appraisal as a 'crucial point to any person's professional growth'.*
>
> *Teachers' careers provide the framework and driving force for the teachers' professional growth.*
>
> *It is because we have never clearly linked appraisal and professional development of teachers in a structural career development sense that we have never taken a systematic approach to in-service education and training, nor attracted the required investment in it. I believe the context of award restructuring provides our best opportunity to move forward in this area.*

80

Strategy Ideas

- The Quality of Teaching and Learning Project should be supported in the development of national guidelines for the recognition of TPD taking into consideration the teacher's career - appraisal linkages outlined in **Australia's Teachers: An Agenda for the Next Decade** (1990).
- All employers/systems should have a clear definition of 'professional development', and a clear set of priorities developed collaboratively with teachers and a clear policy linking professional development to promotion.

5.3.7 School communities will have flexibility over their internal arrangements to take advantage of open access options for professional development activities.

In association with devolution, teachers and principals have expressed a number of concerns including:

- that this is the means of executive management of school systems to pass on the 'hard' decisions in a context of reduced funding;
- that systems' initiatives and demands are absorbing most, if not all, of the funding for professional development before any school or individual teacher needs are considered; and
- that schools still need some guaranteed authority and resources to enable them to make flexible internal arrangements to take advantage of professional development opportunities.

There is the need for schools to use the devolved authority to meet their own professional development needs and, in turn, be accountable to themselves and the employer for implementing policy. The role of the school principal in this process cannot be underestimated.

Strategy Ideas

- School improvement plans should attempt to make optimal use of TPD opportunities through improved internal flexibility.

5.3.8 Schools will be adequately supported to implement professional development plans to meet their determined needs.

Support for schools both in terms of funding and other resources needs to be adequate to meet the needs of both system initiatives and the needs identified by the school and by individual teachers. Schools' resources should also be adequate for experimentation and sufficient to provide conditions of work which not only accommodate the introduction and incorporation of communications technology but also allow teachers and schools to transform existing practice and to develop new understandings of pedagogy in a post-industrial era.

There is a good deal known in education about implementation theory and practice; the critical element in professional development is **ongoing support**, not just isolated, one-shot, ad hoc events. Teachers should be supported not only in the provision of a range of professional development activities but also on a long term basis through:

- ongoing needs assessment;
- provision of time;
- participation in the planning, design, development, delivery and evaluation of activities;
- experimentation into more effective teaching and learning;
- access to comprehensive databases and networks of colleagues and expertise;
- capacity to address identified needs; and
- consultancy support.

While schools have the responsibility to match professional development to identified priorities, the central schedule of change in curriculum, assessment and administrative procedures continues to set the stage. Teachers' proclivity for the relevant and the practical, in combination with the application of corporate management principles and bureaucratic rationality, may well reinforce central control of knowledge despite increased local decision-making (Sachs and Logan, 1990).

Rather than developing reflective practitioners who are able to understand, challenge and transform their practice, TPD in its current form encourages the development of teachers who see their world in terms of instrumental ends achievable through the recipes of 'tried and true' practices legitimated by unexamined experience or uncritically accepted research findings.

Thus there is a need to encourage teachers to experiment and innovate and consider their work within a broader context. The action learning cycle of reflection, understanding and action is being recognised as a valuable management and educational tool for dealing with novel problems.

Strategy Ideas

- The Effective Schools Project needs to give priority to TPD.
- State policies need to include special elements relating to TPD.
- Each school needs to ensure that professional development is central to its development plan.

5.4 Summary

These proposals for an open access policy framework address a complex array of issues with implications for broader policies in education. The proposals relate to courseware, the communications infrastructure and the management of TPD through open access.

While strategies relevant to each proposed policy item have already been described in this Section, it remains necessary to develop an overall strategy and some specific short-term projects for realisation of the policy proposals. This is the purpose of the final section.

Section 6 Realising the Scenario

The ideal scenario described in Section 1 provides a model for TPD which might be achieved following adoption of the policy proposals outlined in Section 5.

A constructive step would be to obtain agreement, at least in principle, but preferably through documented policy of the AEC, to a cooperative national open access approach for TPD which in turn is part of a comprehensive educational policy and infrastructure. Once this commitment in terms of direction has been taken, strategies for achieving such an approach can be enacted as and when needs demand and budgets allow. Priorities and phasing-in stages will need to be determined by such agencies as the AEC and other national and state authorities.

Equity and the pressures outlined in Section 2 demand that all teachers in all schools have access to professional development. Logic dictates that capitalising on the existing projects and initiatives outlined in Section 3 will be the most economic, cost effective and politically feasible method of approach.

The following concrete steps will enable realisation of the goals and principles of the ideal scenario. The most significant is the proposal for a coordinated national educational network for schools which could be implemented in the short term for a cost of around $50-60m or gradually introduced over a number of years through a program of prioritised stages or through seeding sponsorship and support.

Such a network is evolving in any case; commitment to the notion of a national network will most effectively interweave emerging initiatives. TPD becomes one more good reason for such a network.

6.1 A National Educational Network for Schools

If the present projects and reports are an indication that governments and other educational organisations are serious that **all** schools should be involved in national initiatives, and if the contents of this Report are accepted, then: every school requires an educational communications 'gateway', an **Open Access Classroom Studio** [OACS], to enable it to participate in the networking of schools and the wider educational community for:

- sharing common curriculum components and expertise;
- coordinating efforts through administration and management;
- sharing professional development and training for all teachers and other members of the school community;
- accessing support services (including information databases);
- developing school - TAFE - industry linkages.

As indicated in Section 3.3 and Appendix G, there is already available in schools and communities, much of the equipment enabling schools to access a range of networks. Through existing governmental funding mechanisms it should be possible to extend these facilities to all schools at a relatively small cost. Rural schools, both government and non-government, should receive a high priority for early connection to the networks. The implementation strategy ideas have been outlined in Section 5.2.2.

The possibility of commercial use of the facilities by other community, government and industry groups should be explored. The general policy in the past has been that where such use of facilities does not interfere with the school's work, it can be allowed.

The OACSs will require some basic facilities dedicated to the communications-oriented purposes listed above. A separate room specially designed would be ideal, if possible, but in smaller schools the OACS may be in a semi-closed off area, perhaps in the school library. They may be implemented at different levels.

'Level 1' or basic provision would include the microcomputer-based audiographics equipment (i.e. Macintosh, facsimile and loudspeaker telephone as in the Victorian 'Telematics' and the Queensland 'Tele-Learning' Projects), plus a satellite receiving dish and system and a VCR and video monitor. The total capital cost for this equipment would probably not exceed $10,000 per school. However, as stated previously (5.2.2), it is estimated that about half this provision exists now nationally.

'Level 2' should include the extension of the micro-computer options in terms of software and hardware (e.g. 'data show' overhead projector, writing tablet, infrared mice and additional keyboards to allow groups of up to 12 learners to use the system as a class group).

'Level 3' would aim at migrating the whole microcomputer system to ISDN 'Basic Rate' so that all forms of interactive communications will be possible on a dial-up basis. For non-urban schools this may be several years away.

At the same time, the providers of professional development activities and other courseware need access to the networks to transmit material. With regard to audio, audiographic and computer-text this is relatively straightforward using the existing terrestrial telephone network.

With regard to satellite video, the expensive uplink facilities (Major City Earth stations) exist only in the capital cities - plus Ballarat (for Telecom). It is possible, however, to 'backload' programs from many (soon most) medium to large country centres, via terrestrial networks to the MCE for uplinking to the satellite. This is the case, for example, with the Victorian State Network, Vistel and is possible at least on an ad hoc basis in the rest of Australia. Terminal equipment for such a 'Provider's Studio' could be under $100,000 given the new desktop compressed videoconferencing units.

The rudiments of a national educational network are by and large in place. Within a short time - say three years - it would be possible to bring all schools and education providers up to a level where education and training programs could be accessible nationally through a range of technology options. These would use the same infrastructures as are being developed for other sectors of education, government, industry, etc.

Specific, short-term, multistate projects, aimed at present needs and priority areas already identified can be supported as 'trail blazing' projects. They should be collaborative between the Commonwealth and state Governments, and between providers and teachers, to ensure that:

- the needs of all types of schools are attended to; and
- the mechanisms for collaboration are put in place and working.

Project suggestions have already been described for the realisation of specific policy proposals of Section 5. They are briefly collated here by way of summary.

6.2 Program Design and Development Projects

Projects aimed at auditing and expanding the inventory of professional development activities available through telecommunications delivery include the adaptation of existing award and non-award programs, development of new modules for distance delivery and the expansion of locally developed networking initiatives.

6.2.1 Adaptation of Existing Non-award Professional Development Activities

Funding should be made available to assist the production of open access versions of existing non-award TPD projects incorporating new materials as required.

Numerous projects might qualify for selection, however, as an example, four sets of TPD modules are currently being produced within the Projects of National Significance Program. The modules, not specifically designed for distance delivery, cover:

- Mathematics/Science, based on the ELIC approach;
- Mathematics/Science and Technology Curriculum, especially biological technologies;
- Rural and Remote Schools, induction modules; and
- the support of NESB (Non-English Speaking Background) students.

Adaptation and extension of these materials and others for distance delivery and local particularisation would add to the inventory of programs available for open access.

Other existing professional development modules potentially suitable for open access nationwide could be discovered by calling for funding submissions for conversion.

6.2.2 New Non-Award Professional Development Activities

A cooperative, national project for the development and delivery of courseware for distance delivery, particularly utilising satellite video options, could be instituted. Possible topics, to be allocated among interested states and territories, could address current national curriculum priorities and other areas of national need where expertise is scarce such as:

- induction into rural and isolated schools;
- beginning teachers;
- principals' professional development in the context of isolated schools;
- principals in their first year of appointment;
- working with children with exceptional needs, including Aboriginal children, ESL students, etc.;
- secondary subject content areas of national significance such as LOTE, careers education, science, mathematics and technology education; and
- refresher courses.

6.2.3 Professional Networking

A major thrust in this Report has been the need for teachers to be supported in their own networking initiatives. It is well-known that peer-to-peer sharing is one of the most important sources of information and professional development (for example, see Jeffrey, 1981).

Professional networking among teachers, particularly those who are professionally isolated, either in a rural setting or through subject specialisation, can be supported through pilot projects in which teachers are assisted to use established student interactive communications technology for professional development and training.

One option of how this may work could resemble the Simon Fraser University (Vancouver, Canada) model whereby government support is given to the University to permit teachers throughout the province to access the computer-text conferencing system on its mainframe computer. Teachers can set up their text conferences according to their own needs. The range of topics under discussion on that system is extensive.

Government support for at least one university in each state to extend its services in this way is desirable, and through AARNET, national teacher networks are possible.

6.2.4 Adaptation of Existing 'External' Award Courses

There exists throughout Australia a multitude of print-based, 'external', award courses generally taken by employed teachers. These include the fourth 'inservice' year of the B.Ed. program and a variety of Graduate Diplomas.

Support, at minimal cost, should be provided for the conversion of a selection of existing subject units into more interactive media formats, such as live satellite videoconferencing and computer-based audiographics.

Flexibility and choice are concepts fundamental to the philosophy of open learning (Lundin, 1991) allowing learners to select material of interest or direct relevance to themselves or their work situation. The modular approach permits a departure from the lock-step, linear and sequential approach common in most units and courses at present.

Some existing subject units of potential benefit to teachers through an open access approach should be broken into smaller modules for increased flexibility. These would then become exemplary programs.

For early acceptance by teachers, funding could focus on practical, relevant, action-oriented or skills-based units in the first instance.

6.3 Projects recommended to the AEC

This Project applauds the formation and terms of reference of a working party within the AEC to deliberate on issues relating to the establishment of a national communications infrastructure for education. A number of additional projects should also be tackled by this group. Objectives of these projects would be to:

- audit existing provisions and equipment;
- compile an inventory of, and learn from, previous projects through critical comparative evaluation; and
- research effective open access models.

6.4 Management Infrastructure Projects

Again, it is beyond the scope of the current project to resolve issues of managing the necessary infrastructure for an open access approach. Nevertheless, there are a number of projects recommended for support.

- **Consortium development** entails supporting existing and further collaborative ventures for TPD at all levels. A national forum to plan networking for the national coordination and sharing of TPD initiatives should be funded possibly via the proposed National Rural Education and Training Coordinating Committee. Representation should include all interested stakeholders.
- **Database rationalisation** to clarify the most favourable options for collating and disseminating information on available activities is also necessary.

6.5 A Final Word

Through analysis of present initiatives, practices and issues, this Report has demonstrated the significant progress that has already been made in providing the groundwork for a comprehensive system to support the professional development of all teachers throughout Australia, a goal necessary for continued improvement in educational quality in the post- industrial information age. Communications technology is the key to a far-reaching accessible system as evidenced by its utility for the professional development of teachers and other professionals.

A fully collaborative, national approach is imperative in a climate of scarce resources to coordinate effort and integrate the expertise of practitioners, administrators, academics, politicians and students. It is now opportune that a cooperative, national open access policy framework be adopted for TPD so that it can use the open access infrastructures already evolving across all sectors of education and training.

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Appendix A

Methodology of the DLITE Project

The methodology of the Project was based on two assumptions:

- that a responsive approach reflecting the concerns of various interest groups and individuals would produce directions truly national in scope, commitment and support and consistent with identified national needs and priorities; and

- that no existing policy or structures would be pre-empted, but rather subjected to critical scrutiny for their contribution to a national policy.

The participants in the investigation included:

- representatives from state and private sectors in education;
- teacher registration authorities;
- state and national teacher unions and federations;
- professional teacher associations;
- government agencies at state and federal levels;
- the AEC;
- 'experts' in teacher education and distance learning;
- other Higher Education Institution [HEI] representatives; and
- parents and citizen representatives.

There were two principal sources of evidence:

- various groups, organisations, government agencies and individuals were asked to state their views on what should be included in a national policy; and

- existing policy documents and reports, the literature on continuing professional development and training , and material on teacher quality were analysed.

Data collection techniques, therefore, consisted of interviews and documentary analysis. This collection proceeded in a number of phases:

Phase 1: Mapping (September-December 1990)

Selected consultants (listed in Appendix B) in each state and territory were commissioned:

- to conduct an extensive search of existing state policies and practices relating to continuing professional development and inservice training of teachers as well as distance learning, especially where this was applied to teacher education;

- to produce an archive of relevant documents;

- to provide a short report outlining relevant issues and synthesising views; and

- to provide a directory of principal persons who might be approached in the later phases of the project.

In this phase, also, interested persons were invited to make written or oral submissions in response to a national advertisement describing the purpose and nature of the project.

At the same time, a similar study of activities of national groups and authorities was also undertaken by the Project's Senior Research Officer.

Phase 2: Documentary Analysis (December 1990-January 1991)

The various reports at national level and from the states and territories were surveyed by the Project Team. Patterns of issues were identified and analysed by using an issues matrix. Individual people were identified for in-depth interview regarding the national perspective of a proposed policy framework.

At the same time, a comparative analysis of policy and practice models in other professions (e.g. nursing and engineering) was conducted.

Phase 3: Interviews (February-March 1991)

The Project Officer interviewed over 100 people who had been identified in the first two phases above. The interviews were guided by issues identified from that process and were largely interrogative in character. The people interviewed were distributed across all states and territories.

Phase 4: Development of the Draft Proposed Policy Framework (March 1991)

From the evidence, issues and informed opinions collected in the first three phases, there evolved a foundation for a draft policy framework which could become the core of the final report. Historical and existing models for the continuing education of teachers and other professional groups provided a basis for policy formulation. Futures prediction and the postulation of an 'ideal scenario' also informed policy development.

Phase 5: Consultative Testing (April-May 1991)

At the completion of Phase 4 an initial draft document was prepared. This was distributed to approximately 200 people who had previously participated or who had expressed an interest in the project.

A consultative forum ('The Melbourne Forum') with 25 principal stakeholders and 'experts' (Appendix C) in the cognate areas of teacher education, distance education, continuing professional development and policy studies was then conducted in order to:

- critically review the draft policy proposals;
- identify omissions and suggest new inclusions;
- refine the policy proposals as stated in the draft report in the light of responses to the circulated draft; and
- develop strategy ideas for realisation of the proposed policy.

Phase 6: Report Writing (June-October 1991)

In September 1991 the penultimate draft report was discussed in an audio teleconference by the Steering Committee. Comments, suggestions and corrections were then incorporated.

A final report containing proposals for a cooperative national policy framework for continuing professional development of teachers at a distance was produced by the Project Team. Both the rationale for adopting such an approach and implementation strategies have been elaborated.

Throughout the conduct of the investigation the following principles and procedures were implemented: negotiation, confidentiality, anonymity and access.

Appendix D lists the Project's Steering Committee; appendix E lists all other contributors to the Project.

Appendix B

State Consultants to the Project

New South Wales/ Australian Capital Territory	**Dr Murray Print** Senior Lecturer, Faculty of Education University of Sydney
Queensland/Northern Territory	**Prof. Leo Bartlett and Mr Lloyd Logan** Directors Centre for Educational Evaluation and Training
South Australia	**Dr Alan Reid, Director** **Mr Bob Smith and** **Mr Graham Crawford** Centre for Studies in Educational Leadership University of South Australia Underdale Campus
Tasmania	**Ms Judith Walker** WV Learning Associates
Victoria	**Dr Terry Evans** Institute for Distance Education Deakin University and **Mr Daryl Nation** Principal Lecturer/Assistant Head of School School of Social Sciences Monash University College of Gippsland
Western Australia	**Assoc. Prof. John Williamson** Head, School of Teaching Studies Curtin University

Appendix C

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Appendix D

Teacher Quality Steering Committee Members

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Appendix F

Summary of Principles of Good Practice
Source: **Teachers Learning: Improving Australian Schools through Inservice Teacher Training and Development**, 1988, p.40.

Adult Learning
Effective teacher training and development recognises that teachers are learners who need to relate new knowledge to their career and classroom experiences; who need to apply and critically evaluate new practices in their own contexts; and who require support and encouragement throughout the process.

Delivery Modes
Effective teacher training and development recognises the contribution that both innovation-focused and action research delivery modes make to teachers' learning and it balances and supports these modes over time.

Setting and Focus
Effective teacher training and development provides a conducive setting and uses the school as its principal focus because of its pivotal role in the development and application of ideas, the practice and sharpening of skills, and the critical appraisal of curriculum programs.

Leadership
Effective teacher training and development is directly related to the commitment and support provided by principals in schools and is enhanced through collaborative leadership.

Support Structures
Effective teacher training and development provides teachers with ready access to and the development of relevant internal and external support services.

Control
Effective teacher training and development education involves joint planning and collaborative control over program planning and implementation by stakeholders with a commitment to the outcomes of the activity.

Commitment
Effective teacher training and development supports teacher commitment by creating deliberate opportunities and incentives for recurrent or career long, participation in professional learning.

Subject Matter
Effective teacher training and development critically applies the results of educational research in recognised disciplines and new knowledge fields.

Climate
Effective teacher training and development takes place when systems, institutions and individuals commit themselves and their resources to the pursuit of personal and collective professional learning.

Evaluation
Effective teacher training and development moves beyond justificatory evaluation to conscientiously assess its impact on students and their learning, on teachers and their teaching, and on the educational enterprise itself.

Appendix G

Existing Infrastructure for Open Access

Communication Systems

In the past five years there has been a rapid growth of communication systems in Australia which can serve a range of education and training needs. These systems are owned by government , tertiary education and private enterprise. Further details of the equipment and services available are listed in **The Australian Teleconferencing Directory 1991** (Lundin, 1991) which also describes their applications.

1. Government-Supported Systems

The ABC [Australian Broadcasting Corporation] provides the most comprehensive radio and television broadcasting network in Australia. It has had a shifting policy with regard to providing educational programming. Its involvement in the recent Commonwealth-funded televised university project is noteworthy. The SBS [Special Broadcasting Service] is more limited but can provide educational programming.

Almost every state and the Northern Territory has a government communication and information system in place or being developed. Queensland's is based mainly on a satellite option while Victoria's is a combination of terrestrial and satellite networks. These government-based services could provide an inexpensive channel for education and training delivery if state policies permit.

At present, the government systems are different in their basic configurations. This means that until new ISDN and interconnectivity options become available, it is not a simple matter for programs to 'go national' through these systems.

Queensland

- The Media and Information Service, Production Centre (TSN 11') is a government sponsored network of 140 satellite receiving sites (including TAFE Colleges and many schools) plus a number of mobile units, and a voice and data network for government services. Three satellite television studios are in Brisbane located at South Brisbane TAFE, QUT at Kelvin Grove and at the Ashgrove Production Centre of the Education Department. The system has been in operation since 1986.
- 'QNET' is a private company contracted by the Queensland government to provide a voice and data network for government services throughout the state. This includes satellite VSAT dishes in most communities. Electronic mail and audio teleconferencing may become part of this government service.
- QOLCN is a network of Open Learning Centres now located in 33 communities to support education and training for tertiary students and industry. Each Centre has a Coordinator and a community-based committee. Equipment at the Centres permit communications via facsimile, electronic mail and audio teleconferencing. Satellite video reception is available in many locations and will be extended to all Centres by 1992.

Victoria

- The 'Vistel' Network occupies a share of Victoria's State Government Network which covers most parts of the State and, when fully

	implemented, will cover all major towns. It is a hybrid of terrestrial and satellite transmission options, and all forms of teleconferencing.
	• The 'Telematics' network links 'tekpak' units comprising a Macintosh microcomputer, facsimile and loudspeaker telephone system located in over 140 schools.
Tasmania	• 'Tasnet' is a comprehensive electronic text messaging and information system linking all schools and educational offices since 1970.
New South Wales	• Tenders have been called for the development of a government information and communication system which will include extensive videoconferencing facilities.
South Australia	• **NEXUS** is a universal electronic messaging service for all schools and Education Department Offices.

2. Tertiary Education Systems

At least nine TAFE and university interactive, multipoint videoconferencing networks are in existence (see below). All except the Western Australian 'Livenet' use the terrestrial network. All use compatible video compression technology and represent the rudiments of a national universities videoconferencing network of almost 40 sites. With ISDN options becoming readily available in major population centres, it will be possible for these systems to access a range of national and international locations on a dial-up basis.

These systems are limited in terms of extending access to rural and remote learners since the sites for videoconferencing are based in centres of relatively substantial population. Details of selected tertiary education communications developments follow:

- **'Livenet'** is a 1990-91 trial in Western Australia of an interactive, satellite compressed video network linking the Metropolitan College of TAFE in Perth with the Karratha College and campuses in Tom Price and Parraburdoo;
- **Edith Cowan University and Curtin University** are linking their campuses by optical fibre for all forms of interactive communications, including videoconferencing. A study is also being conducted to develop a plan for a network of 'open learning centres' through the State;
- The **Centre for Advanced Learning Systems** [CALS] in TAFE, based in Adelaide, has a network of 'open learning centres' using electronic mail and audio teleconferencing for course delivery. It also has a terrestrial, compressed videoconferencing network of nine sites, extending to ten or more during 1992;
- **Deakin University** has a compressed video link with Warrnambool Campus for administrative purposes;
- **Uninet** at the **University of Sydney** has a videoconferencing network linking all its campuses;
- **UNELink** is the four-point audio and terrestrial, compressed videoconferencing network linking the **University of New England** campuses at Armidale, Lismore, Orange and Coffs Harbour;
- The **Charles Sturt University** is putting in place a four-point videoconferencing system, including collaboration with UNE regarding a site in Dubbo;

- The **University College of Central Queensland** [UCCQ] has a grant to link its campuses by videoconference;
- The **University College of Southern Queensland** [UCSQ] has a five-site audiographics system in place using Olivetti's 'Optel' system;
- The **Victorian TAFE Off-Campus Network** [VTOCN] has an extensive network using audio, audiographics and videoconferencing systems;
- The **Sunraysia Project**, based at Sunraysia College of TAFE in Mildura has a network of centres using video and other forms of teleconferencing across three State boundaries (Victoria, New South Wales and South Australia).

The **Australian Academic and Research Network** [AARNET] is a computer-based electronic text communication network jointly established by the AVCC and CSIRO to link all universities and research centres in Australia. Links with international networks including for example BITNET and EARN, have also been established. The AARNET system is advantageous only to those 'distance' students who are within a local Telecom dial-up area of a university, however, the Australian Distance Education [ADENET] project is reviewing this issue. **Murdoch and Deakin Universities** are to trial access by distance education students to their universities through AARNET (DEET-funded).

3. Commercial Systems

The number of commercial or private enterprise systems will increase as new providers begin to explore the additional opportunities afforded through deregulation and begin to compete with Telecom.

At present, the government supported Remote Commercial Television Services [RCTS] such as Golden West Network, Western Australia [GWN], Vistel (Victoria), Imparja (South Australia-Northern Territory) and QSTV (Queensland Satellite Television) represent important potential for educational services to rural and remote areas. Two major limitations of these services, however, are that:

- they are excluded from delivering programs to urban areas by law; and
- the south-eastern sector of Australia (parts of NSW, Vic, and Tas) does not receive RCTS. The four commercial satellite networks, GWN, Vistel, Imparja and QSTV, use the Aussat satellite system to provide the Remote Commercial Television Service (RCTS). In addition to providing some educational programming, these networks, especially GWN, have been providing one-way video, two-way audio videoconferencing for education and training. These remain, however, under-used in terms of educational programming;

In addition to the RCTS networks, there are three major commercial satellite television networks:

• **Skychannel**	In addition to being a sports TV service, Skychannel provides a one-way video, two-way audio videoconferencing service which boasts a network of 6000 receiving sites throughout Australia, mostly in hotels. A number of TAFE courses in New South Wales have used Skychannel; although it is not usually used for educational purposes;
• **IBM**	The IBM Interactive Satellite Education Network [ISEN] uses interactive television to extend corporate education and training and for group communications for its own staff as well as provide a service to other industries. Studio/classrooms are located in six mainland capitals; and
• **Lend Lease**	Lend Lease Communications has a videoconferencing facility in each mainland capital city. It provides computer and videoconferencing services and consultancies.

4. Telecommunications Provision in Schools

Provision of telecommunications facilities in schools in every state and territory is increasing rapidly. Accurate information is not available from a single source and information about non-government schools in this regard is non-existent. The summary of schools' telecommunications resources which follows indicates that virtually all schools have telephone, television and radio services, approximately half have electronic mail and facsimile while satellite video is available yet restricted to rural schools.

Broadcast	All schools can receive broadcast television and radio, both from the ABC and the commercial providers. RCTS transmission is not available in urban schools by law and does not reach the south east sector. Very few schools have satellite dishes for reception of broadcast or private or semi-private transmission.
Telephone	All schools have telephone access, albeit in many small schools this may be restricted to one line into the principal's office. Under 50 per cent of the schools have loudspeaker telephones for group/hands-free audio teleconferencing. A few schools have only radio telephone.
Electronic Mail	Almost all schools have some computer provision, but modems for electronic mail access have probably not yet reached 50 per cent of schools. In South Australia (NEXUS), Tasmania (Tasnet) and The Northern Territory (Computer Based Administration System, 'CBAS'), all government schools have email access; in Victoria email is accessible to about half the schools; and in Queensland all high schools and over half of the primary state schools have access to Keylink. Information on Western Australia, ACT and New South Wales is not clear, but well under half the schools have email access.
Facsimile	Again, about half the government schools have facsimile machines. In the Northern Territory every school has a fax, and in the New South Wales, the Department of School Education is providing a fax for every government school during 1991. In Queensland and Victoria, on the other hand, only about one-third of schools have faxes.

Appendix H

EDUCATIONAL APPLICATIONS OF TELECOMMUNICATIONS SYSTEMS

Following are Sample Projects which are Recent or Current and which Illustrate a Range of Applications of Communications Technology

RISTS/GRISTS

Principals and teachers from eight very small (1 to 3 teacher) schools have formed a self-help or support group to solve problems as well as discuss resource needs, such as equipment repair, with the Manager of the Education Centre in Tolga on Queensland's Atherton Tablelands. On occasion, subject specialists and departmental administrators have participated for certain issues. This kind of interchange and support assists in overcoming the professional isolation of rural teachers.

Two such regional working groups form the 'Remote and Isolated Schools Teleconferencing Sched' [RISTS] and the 'Gulf Remote and Isolated Teleconferencing Sched' [GRISTS] through weekly audio teleconferences.

Telematics

Following the 1986 Resource Agreement between the Victorian Education Department and the Commonwealth Government, electronic delivery systems are being expanded to improve participation in secondary education by isolated rural students in Victoria. The 'telematics' (audiographic) system adopted after extensive investigation of low-cost options, comprises a Macintosh microcomputer, a loudspeaking audio teleconferencing terminal and a facsimile machine. Schools in clusters communicate through multipoint audio links using ConferLink 6 electronic bridges. Computer conferencing utilises a specially commissioned software program called 'Electronic Classroom'. Terrestrial and satellite video options through Vistel are now also being included in the general Telematics concept (Elliott, 1989).

The system is initiated regionally and is based mainly on school clusters. At the beginning of 1991 there were over 140 schools involved in sharing curriculum subjects. About sixty schools have contributed from their own budgets in purchasing necessary equipment which supports the finding of the review of this initiative (D`Cruz, 1990) that these new methods and technologies have been well received by both students and teachers.

Training in the use of the technology has always been integral to the program but its specific use for TPD has been somewhat limited to date. Indications are that this application will soon gain new proportions. Activities for science teachers and school administrators have been trialled. The John Gardiner 'Science Teachers' Centre' used the audio teleconferencing component of the system for evening sessions on the latest information on VCE Science Study Designs. In this way, country teachers in up to ten locations were able to take part. Participants found the activities enjoyable and worthwhile and welcomed the time and money saved (Doolan, n.d.).

The award-winning East Gippsland Hi-Tech Cluster has excelled since its trials in 1988 of a satellite version of Telematics, which included delivery of video, voice and data for school, TPD and community applications (Balfour, 1989).

In the Loddon-Campaspe-Mallee Region, fourteen schools with satellite dishes receive programs originating from Bendigo and Melbourne. Six other 'Vistel' studios owned variously by schools, TAFE and HEIs are also potentially available. Ten professional development programs on 'mixed ability teaching' for identifying and coping with children at risk are being produced. All the satellite options of microcomputer text and graphics, audio and video conferencing are being utilised.

Educational Television

All educational institutions in Western Australia have access to Educational Television (Ed. TV) on the Golden West Network [GWN] with the option of live talk-back by telephone.

The collaborative joint venture ownership of the project means facilities are shared between: West End Media; TAFE; W.A. Distance Education Centre; the universities of Western Australia; Edith Cowan and Curtin and the Library of Western Australia Audio-visual Service in association with GWN. Programs for teachers deal with a variety of professional matters including rural teaching. Many schools request copies to use as stimulus materials for 'in school' professional development activities.

University of New England (Northern Rivers Campus, Lismore) - Japanese

Students and teachers in Japan who are studying English are regularly linked with high school students and teachers of Japanese in the Northern Rivers region of New South Wales to stimulate and assist language and cultural studies. OTC provides the international satellite link while Telecom sets up domestic satellite connections. The use of 'compressed' video means the transmission is very inexpensive, being equivalent to only about three telephone calls. ('Trial points way to 'global uni", **The Australian**, 9.4.91, p.20).

South Australian Initiatives

Learning experiences in every subject across the curriculum can be enhanced through the use of teleconferencing.

Numerous communications trials using a variety of audio and audiographic devices for curriculum enrichment and distance learning have been reported from South Australia from the late 1970s and early 1980s. Pepper (1986), for example, reports on using audio teleconferencing for calls to Italy for multicultural studies; children's books authors; other schools for comparative social studies; the Reserve Bank in Adelaide regarding the new $100 note for a mathematics lesson; a range of community businesses and agencies regarding decision-making in the community; and the editor of the Bulletin for a language arts lesson.

At least three rural schools are using 'electronic whiteboards', which adds another graphics dimension for sharing information. Reportedly the remote Riverland schools of Loxton, Brown's Well and East Murray have been saved from closure through the use of this audiographic system. ('Schools Saved by Teaching Network', **The Australian**, 21/5/91, p 29).

Although there has been much publicity on the curriculum applications of the technology in South Australia, it has also been used on a regular basis for TPD.

TELESLAQ

Audio and video conferencing are facilitating continuing education for school librarians. In 1983 the School Library Association of Queensland [SLAQ] initiated a series of programs using one-way satellite video and two-way audio teleconferencing for three or four programs a year. Around 150 participants now attend each 'seminar' on a user pays basis. Often interstate and overseas people are involved both as participants and as guest presenters 'linked in'.

The 'TeleSLAQ Model' for professional development at a distance is now being used by several other groups and exhibits three important features believed to contribute to its success:

- advance preparation and circulation of materials;
- local group discussion or 'wrap-around' activities; and
- emphasis on interaction during the teleconference.

(Lundin, 1985)

Details of the course structure which has five components are:

- **Pre-conference materials.**
  A resource booklet with information on the organisation of the conference, the resource experts involved and the relevant topic is produced and mailed to each registered participant in advance. A twenty to thirty minute audio or video tape of resource people's presentations is sent to each site coordinator to be used in the pre-conference discussion.

- **Pre-conference discussion.**
  The expectation is that the seminar will involve three hours evenly divided into a pre-conference discussion, a one-hour teleconference and a post-conference discussion. In the first hour, the audio/video tape is played, topical issues are discussed, questions are formulated, case studies are prepared and spokespersons nominated.

- **Teleconference.**
  Whether audio or satellite video, the agenda for the one-hour link-up is designed to maximise interaction.

- **Post-conference discussion.**
  The final segment of the three-hour block is devoted to local site de-briefing, planning for individual and group follow-up actions and evaluation of the conference.

- **Tape service.**
  For those people unable to attend one of the sites, a taped version of the conference plus the booklet and pre-conference tape are made available at cost.

ELIC

In 1986, the Early Literacy Inservice Course [ELIC] was delivered in Queensland using distance education and communications technology. Seven tutors were employed and trained to provide the teleconference version of ELIC to 120 P-3 teachers in twelve rural locations. A field-worker in each location was also trained in teleconferencing techniques.

The course comprised eleven modules, each of which was based on a printed workbook and conducted as a two-hour session on a fortnightly basis. The five-part structure of the two-hour session is significant as a model:

- Local group discussion based on workbook (15 minutes)
- Audio teleconference discussion with tutors (15 minutes)
- Satellite video transmission(45 minutes) of prerecorded videotape to:-
  - present content
  - demonstrate and model teaching strategies and
  - respond to participants prior queries
- Local group discussion (15 minutes)
- Audio teleconference link-up with tutors (30 minutes)

The course was seen to be a positive and beneficial experience for the majority of the participants (Glen, 1987).

The ELIC telecourse is further elaborated as an exemplary model supporting the Inservice Teacher Education Project by Andrews (1988).

RATEP

The Remote Area Teacher Education Project [RATEP] for community teachers in the far north is part of the Queensland Open Learning Project. A grant from the State government has enabled a collaborative group from James Cook University (Project host), Cairns TAFE, the Queensland Education Department and Queensland University of Technology to establish Open Learning Centres at Yorke and Badu islands, Aurukun and Hopevale for this pilot project in 1990.

Courseware for Aboriginal and Torres Strait Islander teachers has been developed involving print materials and microcomputer-based multimedia activities (Macintosh using 'Authorware'). Audio teleconferencing is also used and a multipoint interactive link-up of the computers, and audio is being explored for real time audiographics interaction.

The findings to date are very positive both in terms of the acceptance of the technologies and the educational impact of this approach (Smith and Brady, 1990).

Inservice Series (Queensland)

Live talk-back satellite video programs for LOTE, Mathematics Inservice, Manual Arts and Secondary Administration have been produced by the Queensland State Education Department for use throughout the State via 'TSN 11'. These have met with limited success, and it appears that the model of having simply a video transmission without local 'wrap-around' sessions and without planned interaction from participants during the videoconference is not a strong one.

Computer Pals

Students and teachers in every part of Australia, link through microcomputers and modems, to engage in computer-text conferencing with their counterparts in over 20 other countries. The Computer Pals Newsletter carries numerous cases of how the curriculum has been enriched through these contacts as teachers incorporate this new resource into their classrooms. The club now boasts wide international membership and held its first conference in Alice Springs in 1988. Some teacher education courses now refer to this teacher-initiated project but much more could be done in this regard.

The project is supported by Epson Australia, OTC Dialcom and NetComm.

Yuendumu Trial

Videoconferencing for remote Aboriginal communities was trialled in a three day workshop in 1990. The aims of the workshop were to discuss the potential of this form of communication for various applications and to demonstrate how culture can be shared through such a system. Over 500 community members took part in a wide range of presentations and exchanges which demonstrated among other things that the technology was readily accepted by all participants as they felt comfortable in using it to achieve their communication needs. Establishment of a permanent Tanami Network has been proposed following the success of the trial (**Communications in the Tanami,** 1990).

Appendix I

Management Aspects of State and Territory Education Systems

Selected material from **The National Conference on Development, Planning and Review** — April 1990.

Source: **Australia's Teachers: An Agenda for the Next Decade** (1990), p. 160-166.

Devolution

The government school systems of Australia represent points on a spectrum of devolution of powers and responsibilities to schools, from reasonably highly devolved as in Victoria, to only marginally devolved in New South Wales. The picture is changing rapidly however, as most States and territories are planning or putting in place mechanisms that will consolidate or increase devolution to schools.

In **Victoria** devolution is represented in both legislation and general policy. The Education Act specifically empowers schools councils, and the Ministerial papers 1-6 contain extensive references to the operation of a devolved system of schools. School councils have responsibility for general policy and school guidelines within a framework of statewide guidelines. They also have responsibility for the preparation of an annual report and for reporting to the school community. Both the annual report and reporting to the community are statutory requirements.

The greater proportion of school recurrent funds now arrive at Victorian schools in two undifferentiated sums, the School Grant and the per capita Education Allowance. These are then allocated within the school according to the policies of the school as determined by the school council. School councils may also undertake, on behalf of the school, minor capital works projects.

An important aspect of devolution in Victorian context is the local selection of school principals and deputy or vice principals under the auspices of the school council. Local selection is not commonly practised in other states/territories.

The publication **Better Schools in Western Australia: A Programme for Improvement** three years ago set out the devolution program for **Western Australian** schools. Schools will account to a 'School Decision Making Group' [SDMG], a requirement which will soon be legislated. The SDMG will be a policy decision making body which will not be involved with operations. Western Australian schools are organised into districts of about twenty schools with a District Superintendent who is not directly involved in operations of the schools but who must ensure that schools meet certain responsibilities according to predetermined requirements. Essentially, schools are accountable for 'problem solving to improve educational outcomes'. District schools provide the staff of the District Office from their own staffing schedules. Principals of the district constitute the District Office Committee and determine the functions to be performed by the staff of the District Office.

Devolution to schools in **Queensland** is currently not mentioned in either Act or Regulations. The Parents and Citizens group is empowered to advise on certain matters, but ultimately the principal is responsible for the school. Queensland is organised into regions and maintains a regionally-based inspectorial system. The recently released **Education: Have Your Say** document foreshadows changes which would markedly increase the degree of devolution in the Queensland government education system. This paper proposes:

- moving the management of resources and services closer to schools by establishing 50 school support centres and providing mechanisms for schools to have more say in curriculum development and the operation of consultants
- trialling school advisory councils
- selecting and appointing school-based classified officers through local panels
- abolishing the inspectorate and establishing teams of educational review officers; and
- making the central office smaller, and revising the role of regions and the central office.

A further report, released following public discussion, is expected in October 1990.

South Australian practice is similar to that of Western Australia in terms of the relationships between schools and district Superintendents. Principals are in charge of and responsible to schools, but each school has an advisory body comprising parents, teachers and, in postprimary schools, students, with the majority of members being parents.

The **ACT** has reasonably devolved system that has tended to have a school rather than system focus from its inception. Schools have a high degree of autonomy in their decision making, but the Berkeley and Kenway Report (1987) suggested the need to develop a greater system orientation.

Northern Territory schools have a high degree of autonomy and considerable community involvement in school councils. There is concern in the Territory to develop a greater system orientation to facilitate more structured curriculum and better implementation of state wide initiatives.

Devolution is not mentioned in the Acts, Regulations or policy in **Tasmania**, nor are school required to have advisory councils. Nevertheless, Tasmania provides untagged resources to schools for them to allocate according to their needs, and has done so for some time. (For instance, 90% of all Commonwealth funds go directly to schools.) Schools have a high level of autonomy for such things as their curriculum, their organisation and methods of operation, allocation of resources, and even for starting and finishing times. An increasing proportion of resources are going to schools untagged and principals are encouraged to consult on their application.

New South Wales has been experiencing a period of very rapid change under the impetus of the Scott Report *School-centred Education* and the processes of Schools Renewal. The management review examined the responsibilities, structures, administrative arrangements and operating practices of the (former) Department of Education, and recommended major strategic, structural and procedural changes designed to improve the provision of education in NSW public schools. Considerable progress has been made with devolution of resources, powers and responsibilities to regional office, cluster and school level. Many schools have established school councils.

District Provision

The notion of ensuring the availability of a comprehensive curriculum within the schools of a district, rather than in individual schools, is being pursued in Victoria and South Australia. The intention is to provide access to a comprehensive curriculum for all students and to improve cooperation and reduce competition between schools.

School Planning

School planning is receiving a great deal of attention in virtually all government schools systems in Australia. In all cases, school planning is linked to accountability and reporting processes. It has assumed greater prominence following the increases in school responsibility.

In **Victoria**, schools are encouraged to implement a cyclic process of self-evaluation, planning, implementation and re-evaluation to support school development and improvement. They are expected to use program budgeting, guidelines contained in the School Curriculum and Organisation Framework, and other approaches if they wish, to implement and allocate resources with a view to achieving the educational policies determined by the school council. This approach gives rise to a school program plan which provides information about the nature and intentions of the school.

South Australian schools are expected to develop their own School Development Plans which set out how they intend to develop their curriculum, teaching practice, management and school community environment over a three year period. These Plans set out the school's objectives over the three years on a rolling basis, the strategies to attain them and the outcomes expected. They are strategic in nature and must be developed in the framework provided by the system level Three Year Plan and the Area Directorate Plan.

Western Australian schools also have School Development Plans which set out their intentions for ensuring effective outcomes within available resources. The Plans are required to include: the purposes of the schools, indicators which will be used to measure the school's performance, details of how the school will monitor its performance, local and Ministry priorities that need addressing, how these priorities will be addressed, and details of the allocation of school resources to ensure effective outcomes, District Superintendents ensure that the required processes have been followed and that Ministry policy is adequately incorporated in the preparation of the Plans, and when satisfied, endorse them and forward them to the Operations Director responsible for the district. A School Decision Making Group representative of the school community is involved in the development process.

In **Queensland** schools, planning occurs through the School Development Plan prepared with school community participation. The Plan is seen as both a development and an accountability document. Planning at the school level occurs within a framework of departmental goals and policies. Members of the regional inspectorate assist with the planning process. Plans are formally approved by the Regional Director.

Tasmanian schools are expected to develop their strategy plan which responds to local needs and the strategic goals and priorities of the Education Division. A suggested structure and format are provided.

The **Northern Territory** has recently introduced Action Plans for School Improvement. In conjunction with their communities, all schools are to develop plans which include: an overview of the development to be accomplished in a three year period, the objectives to be achieved during this period, the tasks to be performed in the accomplishment of objectives, the timeline for the performance of tasks, and strategies including the use of performance indicators for the evaluation and further development of the plan. Each school's plan will be approved by the Secretary of the Department of Education.

At the moment **ACT** schools do not have to meet extensive requirements for school level planning, though planning is widespread.

Planning in **New South Wales** is the specific responsibility of school principals and other managers who are required to lead the planning of their schools and management units. Each school has a local responsibility to plan the best opportunities and outcomes for its students as well as the broader responsibility of ensuring that its plans are consistent with the overall plans for public education. Local needs are addressed through the Renewal Plans and strategic plans, and the management plans of schools, clusters and regions.

School Accountability and Reporting

Accountability and reporting requirements exist for schools in all Australian government schools systems. The differences between school accountability and reporting requirements in the eight systems are largely on three dimensions: the bodies to whom the schools are accountable, the nature of the reporting requirements, and whether or not the schools are subject to external review. External (or a combination of internal and external) reviews are being investigated in some states and territories as a means to promote accountability to the system. Other states/territories are investigating other accountability mechanisms more consistent with devolution. The issue for all state systems appears to be reconciliation of systems' need to be able to present a total picture of education with promoting school improvement in local terms.

In **Victoria**, school councils have responsibility for the preparation of an annual report and for reporting to the school community. Both the annual report, including an audited financial report, and reporting to the community are statutory requirements. There is no external review process. Schools do, however, provide data for statewide planing and evaluation. There is an emphasis on school self-evaluation and support through the School Improvement Plan.

Western Australian schools account to their School Decision Making Groups. The School Development Plan is the key mechanism by which the school principal and staff are accountable to the SDMG and the Chief Executive Officer of the Ministry of Education. Plans must include sections on self-evaluation and forward planning. District Superintendents ensure that required processes have been followed in the preparation of Plans for the SDMGs.

Queensland schools accounts to their Regional Director through the process of approval for School Plans. A broad-based body of school community members examines the program of the school to generate the School Development Plan. The District Inspector is not a member of the planning group but ensures that the processes it employs are in accord with guidelines. Regional officers can and do have an advisory relationship with schools but cannot prescribe parts of a school's educational activities. Where a school's activities are considered inappropriate the matter moves to the discretion of the Regional Director who may then issue an instruction to the school.

South Australian government schools are subject to periodic review. All schools must produce School Development Plans which are approved by their Area Director. They must review their Plans internally on an annual basis, preferably making use of a variety of monitoring procedures. Once very three years, South Australian schools are subject to an external audit organised by members of the Education Review Unit which considers their plans, selected regulations and requirements and an optional topic or topics selected by the school. This same external review procedure will be applied to all of the non-school units of the South Australian Education Department.

Tasmania does not conduct external reviews of government schools. Instead it has taken advantage of its size and has conducted reviews of aspects of the whole school system.

Northern Territory schools develop Action Plans for School Improvement in conjunction with their school councils and have them approved by the Secretary of the Department. The Plans are examined internally every year and a progress report is provided to the school council and to the Department. The schools, in conjunction with their school councils, undertake comprehensive reviews of their Plans every three years.

In **New South Wales**, under the new budgeting arrangements resulting from the Schools Renewals process, moneys provided to schools are no longer being tied to specific expenditure items. The total funding base of the school will instead be available for disbursement in accordance with the priorities assessed by the school. In addition, a range of expenditure items which were formerly the responsibility of Head Office and Regional Offices are now a school responsibility. The increased control of resources is balanced by increased accountability to the school community to demonstrate that the resources are being used appropriately, effectively and efficiently.

Annual reports are prepared by schools, clusters and regions, and the Department of School Education as a whole. They describe the progress in implementing Management Plans over the year.

ACT schools are trialling a two-stage review process. In the first stage the school community (Principal and teachers, school board and other community members, students in secondary schools) conducts a detailed internal review which focuses on system priorities, priorities determined by Regional Directors and school priorities. A review report is produced as part of this stage. In the second stage a school review panel chaired by the Regional Director examines the internal review report. When confirmed, the report becomes a formal report to the school community.

Statewide Plans

Most government systems throughout Australia now publish, or are planning to publish, statements of priorities, directions, goals or objectives of their system in a freely available form for the benefit of schools, school communities and the wider community. In the main it is the strategic priorities and directions rather than the ongoing ones which receive attention. The extent to which schools are required to address system priorities and directions directly is hard to gauge.

ACT schools will soon be provided with a Planning Portfolio intended to guide their planning. The documents will describe planning at the system level and indicate where responsibility lies for implementation.

In **New South Wales** a Department of School Education planning model has been developed. It provides ideas for schools, clusters and regions on the development of the processes which suit their needs. *Education 2000* contains the mission statement of the Department, the objectives of school education, and specific outcomes for schooling in New South Wales. It is the framework for strategic and management planning, and sets objectives and outcomes which can be adapted by schools, clusters and regions as a focus for their own planning. The detail of how the *Education 2000* outcomes will be achieved is in the strategic and management plans of schools, clusters, regions and DSE Strategic Plan. This plan describes the initiatives and areas of continuing high priority for the Department over the next three to five years. It describes the allocation of the resources available to the Department and the basis for reporting the Department's achievements. Areas of Emphasis is published each year as a statement of priority areas of the Department. It is drawn from the first year of the Department's Strategic Plan.

The **Northern Territory** Department of Education publishes corporate/strategic planning documents for its schools to use as a resource in developing their own Plans.

Queensland has a Strategic Plan for 1989-92 which includes a mission statement, beliefs, goals, strategies, action steps and performance indicators. The Strategic Plan is seen as an important part of the framework of guidelines and policies according to which Queensland schools conduct their planning.

South Australia has published a strategic plan, the *Three Year Plan 1990-92* which government schools must address in developing their own Plans. The document contains a set of strategic objectives, priorities, strategies and outcomes.

Tasmania has published a Corporate Plan for 1989-92 which is intended to provide a framework for government schools planning activities. This document contains a mission statement, principles, corporate goals, issues, major strategic goals and priorities.

Victoria is developing a strategic plan which is intended to provide the framework and guidelines for government schools. The document contains objectives, outcomes, strategies, indicators and priority tasks for the school system.

The Schools Division of **Western Australia** has developed a draft corporate plan. The document is quite detailed, comprising ethos and purpose statements, system performance indicators, monitoring principles, priorities, a strategic plan, strategic issues and a resource plan. The document is intended to assist schools with their School Development Plans by indicating Ministry priorities and how they are to be addressed.